10/510194
File 5:Biosis Previews(R) 1926-2007/Mar W2
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Set	Items	Description
Set	Items	Description
S1	81	HEMOGLOBIN AND CRYSTALLOID
S2	0	POLYALKYLENE AND S1
S3	1	OXIDE AND S1
S4	30	HEMOGLOBIN AND HYPEROSMOL?
S5	29	S4 NOT S1
S6	112	HEMOGLOBIN AND HYPERTONIC
S7	107	S6 NOT S1 NOT S4
S8	0	S6 AND S4
S9	638	HEMOGLOBIN AND SALT
S10	7	S9 AND (EXPANDER OR SUBSTITUTE)
S11	7	S1 AND (EXPANDER OR SUBSTITUTE)
S12	7	S11 NOT S10
S13	9	S6 AND (EXPANDER OR SUBSTITUTE)

? t s3/7/1

3/7/1
DIALOG(R)File 5:Biosis Previews(R)
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18963363 BIOSIS NO.: 200600308758
Disposition and pharmacodynamics of propofol during isovolaemic haemorrhage followed by %%%crystalloid%%% resuscitation in humans
AUTHOR: Takizawa Eri; Takizawa Daisuke (Reprint); Hiraoka Haruhiko; Saito Shigeru; Goto Fumio
AUTHOR ADDRESS: Gunma Univ, Sch Med, Dept Anaesthesiol, 3-39-22 Showa Machi, Maebashi, Gumma 3718511, Japan**Japan
AUTHOR E-MAIL ADDRESS: d-takiza@bf6.so-net.ne.jp
JOURNAL: British Journal of Clinical Pharmacology 61 (3): p256-261 MAR 2006 2006
ISSN: 0306-5251
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: AimsThe purpose of this study was to estimate the changes in unbound propofol concentration and pharmacodynamics of propofol during isovolaemic haemorrhage followed by %%%crystalloid%%% resuscitation.MethodsTen patients undergoing measure elective surgery were enrolled in this study. Anaesthesia was maintained by 60% nitrous %%%oxide%%% in oxygen, fentanyl 10-20 mu g kg(-1) and an infusion of propofol at 8 mg kg(-1) h(-1) until the end of the operation. Radial arterial samples were collected for measurement of propofol concentration just before the start of the operation, and at the point when blood loss was > 10 ml kg(-1), 20 ml kg(-1) and 30 ml kg(-1). Cardiac output (CO), haemoglobin values and plasma concentrations of albumin were also determined. Patients were resuscitated with lactated Ringer's solution to maintain a mean arterial blood pressure (+/- 20% of prehaemorrhage).

1 = 1-11-2007

Searches ordered 3-20-07

AUTHOR: King David R; Cohn Stephen M; Proctor Kenneth G (Reprint)
AUTHOR ADDRESS: Univ Miami, Sch Med, Ryder Trauma Ctr,Res Inst, Div Trauma and Surg Crit Care,Dewitt Daughtry Famil, 1800 NW 10th Ave, Miami, FL 33136 USA**USA
AUTHOR E-MAIL ADDRESS: kproctor@miami.edu
JOURNAL: Journal of Trauma Injury Infection and Critical Care 59 (3): p 553-560 SEP 2005 2005
ISSN: 1079-6061
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background. Traumatic brain injury (TBI) remains an exclusionary criterion in nearly every clinical trial involving %%%hemoglobin%%%-based oxygen carriers (HBOCs) for traumatic hemorrhage. Furthermore, most HBOCs are vasoactive, and use of pressors in the setting of hemorrhagic shock is generally contraindicated. The purpose of this investigation was to test the hypothesis that low-volume resuscitation with a vasoactive HBOC (%%%hemoglobin%%% glutamer-200 [bovine], HBOC-301; Oxyglobin, BioPure, Inc., Cambridge, MA) would improve outcomes after severe TBI and hemorrhagic shock.Methods: In Part 1, anesthetized swine received TBI and hemorrhage (30 +/- 2 mL/kg, n = 15). After 30 minutes, lactated Ringer's (LR) solution (n = 5), HBOC (n = 5), or 10 mL/kg of LR + HBOC (n = 5) was titrated to restore systolic blood pressure to >= 100 mm Hg and heart rate (HR) to <= 100 beats/min. After 60 minutes, fluid was given to maintain mean arterial pressure (MAP) at >= 70 nun Hg and heterologous whole blood (red blood cells [RBCs], 10 mL/kg) was transfused. for %%%hemoglobin%%% at <= 5 g/dL. After 90 minutes, mannitol (MAN, 1 g/kg) was given for intracranial pressure >= 20 min Hg, LR solution was given to maintain cerebral perfusion pressure at >= 70 min Hg, and RBCs were given for %%%hemoglobin%%% of <= 5 g/dL. In Part 2, after similar TBI and resuscitation with either LR + MAN + RBCs (n = 3) or HBOC alone (n = 3), animals underwent attempted weaning, extubation, and monitoring for 72 hours.Results: In Part 1, relative to resuscitation with LR + MAN + RBCs, LR + HBOC attenuated intracranial pressure (12 +/- 1 min Hg vs. 33 +/- 6 mm Hg), improved cerebral perfusion pressure in the initial 4 hours (89 +/- 6 nun Hg vs. 60 +/- 3 mm Hg), and improved brain tissue PO2 (34.2 +/- 3.6 min Hg vs. 16.1 +/- 1.6 mm Hg; all p < 0.05). Cerebrovascular reactivity and intracranial compliance were improved with LR + HBOC (p < 0.05) and fluid requirements were reduced (30 +/- 12 vs. 280 +/- 40 mL/kg; p < 0.05). Lactate and base excess corrected faster with LR + HBOC despite a 40% reduction in cardiac index. With HBOC alone and LR + HBOC, MAP and HR rapidly corrected and remained normal during observation; however, with HBOC alone, lactate clearance was slower and systemic oxygen extraction was transiently icreased. In Part 2, resuscitation with HBOC alone allowed all animals to wean and extubate, whereas none in the LR + MAN + RBCs group was able to wean and extubate. At 72 hours, no HBOC animal had detectible neurologic deficits and all had normal hemodynamics.Conclusion: The use of HBOC-301 supplemented by a %%%crystalloid%%% bolus was clearly superior to the standard of care (LR + MAN + RBCs) after TBI. This may represent a new indication for HBOCs. Use of HBOC eliminated the need for RBC transfusions and mannitol. The inherent vasopressor effect of HBOCs, especially when used alone, may misguide initial resuscitation, leading to transient poor global tissue perfusion despite restoration of MAP and HR. This suggests that MAP and HR are inadequate endpoints with HBOC resuscitation. HBOC use alone after TBI permitted early extubation and excellent 72-hour outcomes.

Bispectral index (BIS) was measured continuously.ResultsMean blood pressure, heart rate and CO were well maintained during the operation in all patients. Haemoglobin values and plasma albumin concentrations decreased significantly during surgery. There were no significant differences in total propofol concentrations across the time points. The unbound propofol concentration was increased from 0.10 +/- 0.040 mu g ml(-1) to 0.17 +/- 0.041 mu g ml(-1) after the haemorrhage of 30 ml kg(-1) (P < 0.05). BIS was significantly decreased from 47 +/- 5.9 to 39 +/- 3.7 (P < 0.05) after the haemorrhage of 30 ml kg(-1).ConclusionsThe hypnotic potency of propofol is increased during isovolaemic haemorrhage in %%%crystalloid%%% resuscitated patients even if CO is maintained.

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1/7/1
DIALOG(R)File 5:Biosis Previews(R)

0019512970 BIOSIS NO.: 200700172711
Rapid induction of brain hypothermia by endovascular intra-arterial perfusion
AUTHOR: Furuse Motomasa (Reprint); Preul Mark C; Kinoshita Yoshihiko; Nishihara Kentaro; Isono Naofumi; Kuroiwa Toshihiko
AUTHOR ADDRESS: 2-7 Daigaku Machi, Takatsuki, Osaka 5698686, Japan**Japan
AUTHOR E-MAIL ADDRESS: Mfuruse@aol.com
JOURNAL: Neurological Research 29 (1): p53-57 JAN 2007 2007
ISSN: 0161-6412
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objectives: Achieving rapid, brain cooling has potentially important clinical implications. To investigate potential practicalities, we induced brain hypothermia in canines by perfusing cooled %%%crystalloid%%% solution into the carotid artery using an extracorporeal cooling-filtration system.Methods: Ringer's solution cooled to similar to 6.5 degrees C was infused at a rate of 3 ml/kg/min for 30 minutes into the right common carotid artery through an angiographic catheter via the right femoral artery in six adult canines (13.81 +/- 0.60 kg). Excessive fluid was ultrafiltrated through a venovenous extracorporeal circuit via the right femoral vein. Temperature was monitored in the cerebral hemispheres, the rectum and the vena cava. The extracellular lactate concentrations were measured by microdialysis in the frontal lobes.Results: Right brain temperature decreased to 33.6 +/- 2.0 degrees C from 37.7 +/- 1.1 degrees C 30 minutes after initiation of perfusion, while left brain and rectal temperatures were 34.3 +/- 1.7 and 34.1 +/- 1.3 degrees C, respectively. The cooling rate of the right cerebral hemisphere was 4.2 +/- 1.1 degrees C/ 30 minutes and advanced compared with the rectum (p < 0.01), the left cerebral hemisphere and the vena cava (both p < 0.05). There was no significant increase in the extracellular lactate concentrations in the cerebral hemispheres. %%%Hemoglobin%%%, hematocrit and cardiac function significantly changed during perfusion (p < 0.05).Conclusions: Brain hypothermia was rapidly and safely induced using an intra-arterial %%%crystalloid%%% infusion and an extracorporeal cooing-filtration system. With refinement and further assessment of metabolic and physiologic parameters, the method holds a potential for clinical utility.

1/7/2
DIALOG(R)File 5:Biosis Previews(R)

19277641 BIOSIS NO.: 200600623036
Clinical experience with Voluven (R) solution used as a basic component for pump oxygenator filling during operations on the cardiac valves and coronary arteries
AUTHOR: Bakanov A Yu; Samsonova N N; Akimov I; Naimushin A; Kadyshkina Ye B
JOURNAL: Anesteziologiya i Reanimatologiya (3): p41-45 2006 2006
ISSN: 0201-7563
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian

ABSTRACT: The present study comparatively analyzed the clinical effects of three solutions used to fill an extracorporeal circulatory circuit (ECCC). The arterial and venous blood samples taken from patients operated on for valvular disease and coronary heart disease were studied. All patients (n = 61) were divided into 3 groups according to the basic component of the primary volume of ECCC filling: 1) Ringer's %%%crystalloid%%% solution; 2) gelofusin; 3) the hydroxyethyl starch 130/0.4 Voluven (R). The resultant samples were examined for the following parameters: a) hematological: the levels of formed blood elements, %%%hemoglobin%%%, erythrocytic %%%hemoglobin%%%, and free %%%hemoglobin%%% and the histograms of leukocytes, erythrocytes, and platelets; b) physicochemical: arterial and venous blood pH, pO(2), pCO2, Sat O(2); c) biochemical: blood electrolytic balance and lactate levels. The values of %%%hemoglobin%%%, hematocrit, and blood gas composition were used to calculate oxygen consumption (ml/min x m(2)). The parameters of central hemodynamics and the temperatures in the rectum, esophagus, and venous oxygenator port were continuously monitored during extracorporeal circulation (EC). At its end, overall diuresis and water balance were determined. The plasma-substituting effect of Voluven (R) was found to be highly effective during a clinical study. The found beneficial properties of the agent may be particularly attractive while applying EC to the surgery of acquired heat diseases when the duration of an operation and, accordingly, extracorporeal support forces the physician to administer large solution doses many times.

1/7/3
DIALOG(R)File 5:Biosis Previews(R)

19217245 BIOSIS NO.: 200600562640
Prehospital HBOC-201 after traumatic brain injury and hemorrhagic shock in swine
AUTHOR: Patel Mayur B; Feinstein Ara J; Saenz Alvaro D; Majetschak Matthias ; Proctor Kenneth G (Reprint)
AUTHOR ADDRESS: Univ Miami, Sch Med, Ryder Trauma Ctr, Div Trauma, 1800 NW 10th Ave, Miami, FL 33136 USA**USA
AUTHOR E-MAIL ADDRESS: kproctor@miami.edu
JOURNAL: Journal of Trauma Injury Infection and Critical Care 61 (1): p 46-56 JUL 2006 2006

ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background. Data are limited on the actions of %%%hemoglobin%%% based oxygen carriers (HBOCs) after traumatic brain injury (TBI). This study evaluates neurotoxicity, vasoactivity, cardiac toxicity, and inflammatory activity of HBOC-201 (Biopure, Cambridge, Mass.) resuscitation in a TBI model.Methods: Swine received TBI and hemorrhage. After 30 minutes, resuscitation was initiated with 10 mL/kg normal saline (NS), followed by either HBOC-201 (6 mL/kg, n = 10) or NS control (n = 10). Supplemental NS was administered to both groups to maintain mean arterial pressure (MAP) > 60 mm Hg until 60 minutes, and to maintain cerebral perfusion pressure (CPP) > 70 mm Hg from 60 to 300 minutes. The control group received mannitol (1 g/kg) and blood (10 mL/kg) at 90 minutes and half (n = 5) received CPP directed phenylephrine (PE) therapy after 120 minutes. Serum cytokines; were measured with ELISA and coagulation was evaluated with thromboelastography. Brains were harvested for neuropathology.Results. With HBOC administration, MAP, CPP, and brain tissue PO2 were restored within 30 minutes and maintained until 300 minutes. Clot strength and fibrin formation were maintained and 9/10 successfully extubated. In contrast, with control, MAP and brain tissue PO2 did not correct until 120 minutes, after mannitol, transfusion and 40% more %%%crystalloid%%%. Furthermore, without PE, CPP did not reach target and 0/5 could be extubated. Lactate, heart rate, cardiac output, mixed venous oxygenation, muscle oxygenation, serum cytokines, and histology did not differ between groups.Conclusions. After TBI, a single HBOC-201 bolus with minimal supplements provided rapid resuscitation, while maintaining CPP and improving brain oxygenation, without causing cardiac dysfunction, coagulopathy, cytokine release, or brain structural changes.

1/7/4
DIALOG(R)File 5:Biosis Previews(R)

19133363 BIOSIS NO.: 200600478758
The role of antifibrinolytic agents in gynecologic cancer surgery
AUTHOR: Celebi Nalan (Reprint); Celebioglu Bilge; Selcuk Mehtap; Canbay Zgur; Karagoz Ayse H; Aypar Ulku
AUTHOR ADDRESS: Hacettepe Univ, Dept Anesthesiol and Reanimat, Fac Med, TR-06100 Ankara, Turkey**Turkey
AUTHOR E-MAIL ADDRESS: nalanmd@hotmail.com
JOURNAL: Saudi Medical Journal 27 (5): p637-641 MAY 2006 2006
ISSN: 0379-5284
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: To compare the effects of %%%crystalloid%%% and colloid solutions, tranexamic acid and epsilon-aminocaproic acid on the need for allogenic blood transfusion and on coagulation and fibrinolysis parameters.Methods: We conducted the study in the Anesthesiology and Reanimation Department of Hacettepe University Medical Faculty, Ankara, Turkey between March 2004 and April 2005. The study included 105

patients, classified by the American Society of Anesthesiology as physical status groups I-II, undergoing gynecologic cancer treatment. We divided them into 5 groups: group I (%%%crystalloid%%%) received %%%crystalloid%%% solutions, group 11 (colloid) received colloid solutions, group III (tranexamic acid) received 10 mg.kg(-1) tranexamic acid, and group 5 (epsilon-aminocaproic acid) received 100 mg.kg(-1) epsilon-aminocaproic acid. All patients' bleeding amount was measured and recorded perioperatively, and at the 12th and 24th hours postoperatively. We then evaluated the patients' %%%hemoglobin%%%, hematocrit, activated thromboplastin time, international normalized ration, fibrinogen, and thrombocyte count and symptoms of pulmonary embolism.Results: In comparing the amount of bleeding, the bleeding in the tranexamic acid group was 30.8% less than the %%%crystalloid%%% group ($p < 0.05$), 33.3% less than the colloid group ($p < 0.05$), and 23.9% less than the epsilon-aminocaproic acid group ($p < 0.05$).Conclusion: When the negative effects of blood transfusions were considered, tranexamic acid administration can be recommended for decreasing the need for blood transfusion in gynecologic cancer surgery.

1/7/5
DIALOG(R)File 5:Biosis Previews(R)

19069327 BIOSIS NO.: 200600414722
Systemic function, oxygenation and microvascular correlation during treatment of hemorrhagic shock with blood substitutes
AUTHOR: Cheung Anthony T (Reprint); Duong Patricia L; Driessen Bernd; Chen Peter C; Jahr Jonathan S; Gunther Robert A
AUTHOR ADDRESS: Univ Calif Davis, Med Ctr, Dept Pathol and Lab Med, Sacramento, CA 95817 USA**USA
AUTHOR E-MAIL ADDRESS: atcheung@ucdavis.edu
JOURNAL: Clinical Hemorheology and Microcirculation 34 (1-2): p325-334 2006 2006
ISSN: 1386-0291
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Systemic function and oxygenation changes during hemorrhagic shock treatment were continuously monitored and correlated with real-time microvascular changes. After splenectomy, each dog (n = 12) was hemorrhaged (MAP = similar to 50 mmHg; similar to 40% blood loss = 32-36 ml/kg) and randomly assigned to 4 resuscitation groups: autologous/shed blood, %%%hemoglobin%%%-based oxygen-carrier/Oxyglobin(R), %%%crystalloid%%%/saline, and colloid/Hespan(R). Systemic function and oxygenation changes were continuously monitored and measured using standard operating room protocols. Computer-assisted intravital microscopy was used to non-invasively videotape and objectively analyze and quantify real-time microvascular changes in the conjunctival microcirculation. All measurements were made during pre-hemorrhagic (baseline), post-hemorrhagic and post-resuscitation phases of the study. Pre-hemorrhagic microvascular changes were similar in all 12 dogs (venular diameter = 43 +/- 12 mu m; red-cell velocity = 0.6 +/- 0.2 mm/s). All dogs showed similar significant ($P < 0.01$) post-hemorrhagic microvascular changes: similar to 20% decrease in venular diameter; similar to 80% increase in red-cell velocity. These microvascular changes

correlated with post-hemorrhagic systemic function and oxygenation changes. The resuscitations restored microvascular changes to pre-hemorrhagic values; the microvascular reversals also correlated with post-resuscitation systemic function changes in all groups. However, only shed blood resuscitation restored oxygenation level close to pre-hemorrhagic values. All 12 dogs survived resuscitation treatments despite differences in oxygen-carrying capability between groups.

1/7/6
DIALOG(R)File 5:Biosis Previews(R)

18978609 BIOSIS NO.: 200600324004
Method for maintaining and/or restoring viability of organs
AUTHOR: Owen Donald R; Kravitz David C
AUTHOR ADDRESS: New Orleans, LA USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents DEC 20 2005 2005
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: An organ perfusion apparatus and method monitor, sustain and/or restore viability of organs and preserve organs for storage and/or transport. The method includes perfusing the organ at hypothermic and/or normothermic temperatures, preferably after hypothermic organ flushing for organ transport and/or storage. The method can be practiced with prior or subsequent static or perfusion hypothermic exposure of the organ. Organ viability is restored by restoring high energy nucleotide (e.g., ATP) levels by perfusing the organ with a medical fluid, such as an oxygenated cross-linked %%%hemoglobin%%%-based bicarbonate medical fluid, at normothermic temperatures. In perfusion, organ perfusion pressure is preferably controlled in response to a sensor disposed in an end of tubing placed in the organ, by a pneumatically pressurized medical fluid reservoir, providing perfusion pressure fine tuning, overpressurization prevention and emergency flow cut-off. In the hypothermic mode, the organ is perfused with a medical fluid, preferably a simple %%%crystalloid%%% solution containing antioxidants, intermittently or in slow continuous flow. The medical fluid may be fed into the organ from an intermediary tank having a low pressure head to avoid organ overpressurization. Preventing overpressurization prevents or reduces damage to vascular endothelial lining and to organ tissue in general. Viability of the organ may be automatically monitored, preferably by monitoring characteristics of the medical fluid perfusate. The perfusion process can be automatically controlled using a control program.

1/7/7
DIALOG(R)File 5:Biosis Previews(R)

18977038 BIOSIS NO.: 200600322433
Resuscitation with a %%%hemoglobin%%%-based oxygen carrier after traumatic brain injury

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	460	hemoglobin and hypertonic	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 13:44
L2	89	hemoglobin.ab. and hypertonic	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 13:59
L3	7	hemoglobin.ab. and hypertonic.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 13:44
L4	81	hemoglobin.ab. and crystalloid	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 13:59
L5	49	l4 not l2	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 14:18
L6	111	(blood substitut$) and hypertonic	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 14:18
L7	17	(blood substitut$) and hyperosmol$	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 14:19
L8	217	(blood substitut$) and crystalloid	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 14:19
L9	5	(blood substitut$).ab. and crystalloid.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/03/19 14:19

1/7/8
DIALOG(R)File 5:Biosis Previews(R)

18963363 BIOSIS NO.: 200600308758
Disposition and pharmacodynamics of propofol during isovolaemic haemorrhage followed by %%%crystalloid%%% resuscitation in humans
AUTHOR: Takizawa Eri; Takizawa Daisuke (Reprint); Hiraoka Haruhiko; Saito Shigeru; Goto Fumio
AUTHOR ADDRESS: Gunma Univ, Sch Med, Dept Anaesthesiol, 3-39-22 Showa Machi, Maebashi, Gumma 3718511, Japan**Japan
AUTHOR E-MAIL ADDRESS: d-takiza@bf6.so-net.ne.jp
JOURNAL: British Journal of Clinical Pharmacology 61 (3): p256-261 MAR 2006 2006
ISSN: 0306-5251
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: AimsThe purpose of this study was to estimate the changes in unbound propofol concentration and pharmacodynamics of propofol during isovolaemic haemorrhage followed by %%%crystalloid%%% resuscitation.MethodsTen patients undergoing measure elective surgery were enrolled in this study. Anaesthesia was maintained by 60% nitrous oxide in oxygen, fentanyl 10-20 mu g kg(-1) and an infusion of propofol at 8 mg kg(-1) h(-1) until the end of the operation. Radial arterial samples were collected for measurement of propofol concentration just before the start of the operation, and at the point when blood loss was > 10 ml kg(-1), 20 ml kg(-1) and 30 ml kg(-1). Cardiac output (CO), haemoglobin values and plasma concentrations of albumin were also determined. Patients were resuscitated with lactated Ringer's solution to maintain a mean arterial blood pressure (+/- 20% of prehaemorrhage). Bispectral index (BIS) was measured continuously.ResultsMean blood pressure, heart rate and CO were well maintained during the operation in all patients. Haemoglobin values and plasma albumin concentrations decreased significantly during surgery. There were no significant differences in total propofol concentrations across the time points. The unbound propofol concentration was increased from 0.10 +/- 0.040 mu g ml(-1) to 0.17 +/- 0.041 mu g ml(-1) after the haemorrhage of 30 ml kg(-1) ($P < 0.05$). BIS was significantly decreased from 47 +/- 5.9 to 39 +/- 3.7 ($P < 0.05$) after the haemorrhage of 30 ml kg(-1).ConclusionsThe hypnotic potency of propofol is increased during isovolaemic haemorrhage in %%%crystalloid%%% resuscitated patients even if CO is maintained.

1/7/9
DIALOG(R)File 5:Biosis Previews(R)

18598528 BIOSIS NO.: 200510293028
Kinetics and extravascular retention of acetated Ringer's solution during isoflurane or propofol anesthesia for thyroid surgery
AUTHOR: Ewaldsson Carl-Arne; Hahn Robert G (Reprint)
AUTHOR ADDRESS: S Hosp, Dept Anesthesiol, Stockholm, Sweden**Sweden
AUTHOR E-MAIL ADDRESS: robert.hahn@sodersjukhuset.se

JOURNAL: Anesthesiology (Hagerstown) 103 (3): p460-469 SEP 2005 2005
ISSN: 0003-3022
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: In sheep, isoflurane causes extravascular accumulation of infused %%%crystalloid%%% fluid. The current study evaluates whether isoflurane has a greater tendency than propofol to cause extravascular retention in surgical patients.Methods: Thirty patients undergoing thyroid surgery lasting for 143 +/- 32 min (mean +/- SD) received an intravenous infusion of 25 ml/kg acetated Ringer's solution over 30 min. Anesthesia was randomized to consist of isoflurane or propofol supplemented by fentanyl. The distribution and elimination of the infused fluid was estimated using volume kinetics based on the fractional dilution of blood %%%hemoglobin%%% over 150 min. Extravascular retention of infused fluid was taken as the difference between the model-predicted elimination and the urinary excretion. The sodium and fluid balances were measured.Results: The fractional plasma dilution increased gradually to approximately 30% during the infusion and thereafter remained at 15-20%. Urinary excretion averaged 11% of the infused volume. Mean arterial pressure was 10 mmHg lower in the isoflurane group ($P < 0.001$). The excess fluid volumes in the central and peripheral functional body fluid spaces were virtually identical in the groups. The sum of water losses by evaporation and extravascular fluid retention amounted to 2.0 +/- 2.5 ml/min for isoflurane and 2.2 +/- 2.1 ml/min for propofol. The sodium balance refuted that major fluid shifts occurred between the extracellular and intracellular spaces.Conclusions. The amount of evaporation and extravascular retention of fluid was small during thyroid surgery, irrespective of whether anesthesia was maintained by isoflurane or propofol.

1/7/10
DIALOG(R)File 5:Biosis Previews(R)

18598525 BIOSIS NO.: 200510293025
"The proper study of mankind is man" - Rather, men and women undergoing anesthesia and surgery
AUTHOR: Prough Donald S (Reprint)
AUTHOR ADDRESS: Univ Texas, Med Branch, Galveston, TX 77550 USA**USA
AUTHOR E-MAIL ADDRESS: dsprough@utmb.edu
JOURNAL: Anesthesiology (Hagerstown) 103 (3): p451-452 SEP 2005 2005
ISSN: 0003-3022
DOCUMENT TYPE: Article; Editorial
RECORD TYPE: Citation
LANGUAGE: English

1/7/11
DIALOG(R)File 5:Biosis Previews(R)

18536330 BIOSIS NO.: 200510230830
Prehospital %%%hemoglobin%%%-based oxygen carrier resuscitation attenuates postinjury acute lung in jury

AUTHOR: Masuno Tomohiko; Moore Ernest E (Reprint); Cheng Aaron M; Moore Peter K; Grant Abigail R; Johnson Jeffrey L
AUTHOR ADDRESS: Denver Hlth Med Ctr, Dept Surg, Denver, CO 80204 USA**USA
AUTHOR E-MAIL ADDRESS: ernest.moore@dhha.org
JOURNAL: Surgery (St Louis) 138 (2): p335-341 AUG 2005 2005
ISSN: 0039-6060
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background. %%%Crystalloid%%% infusion has been the standard prehospital fluid resuscitation in the United States for the past 35 years, but the emergence of a safe and effective %%%hemoglobin%%%-based oxygen carrier (HBOC) may change that practice. The purpose of this in vivo study is to simulate an existing multicenter prehospital trial of HBOC versus %%%crystalloid%%% to determine the effects in a controlled 2-event construct of postinjury multiple organ failure.Methods. Rats underwent hemorrhagic shock (30 mm Hg X 45 min) and were resuscitated over 2 hours in a clinically relevant design: 2 X volume of shed blood (SB) using normal saline (NS) in the first 30 minutes; 112 volume of SB in the next 30 minutes; another 2 X SB volume with NS over the remaining 60 minutes. Study groups represented alternative fluid strategies during the first hour of resuscilation: (1) Inhospital SB (standard resuscitation), (2) Inhospital HBOC, (3) Prehospital SB, and (4) Prehospital HBOC. Global physiologic response was assessed via tissue oxygenation (near infrared spectroscopy) and arterial base deficit, and pulmonary response, via lung polymorphonuclear neutrophil accumulation and vascular permeability.Results. Prehospital HBOC resuscitation provided the most efficient recovery of tissue oxygenation and correction of base deficit, had the greatest reduction in pulmonary polymorphonuclear neutrophil accumulation, and abrogated, acute lung injury. Prehospital SB and Inhospital HBOC regimens afforded intermediate lung protection, compared with standard resuscitation.Conclusions. The findings in this controlled in vivo study suggest prehospital HBOC resuscitation improves the recovery from postshock oxygen debt. and reduces postinjury organ dysfunction.

1/7/12
DIALOG(R)File 5:Biosis Previews(R)

18152243 BIOSIS NO.: 200500059308
Effects of different catecholamines on the dynamics of volume expansion of %%%crystalloid%%% infusion
AUTHOR: Vane Luiz A; Prough Donald S; Kinsky Michael A; Williams Chad A; Grady James J; Kramer George C (Reprint)
AUTHOR ADDRESS: Med BranchDept AnesthesiolRes Lab, Univ Texas, OSB 2-51, Galveston, TX, 77555, USA**USA
AUTHOR E-MAIL ADDRESS: gkramer@utmb.edu
JOURNAL: Anesthesiology (Hagerstown) 101 (5): p1136-1144 November 2004 2004
MEDIUM: print
ISSN: 0003-3022 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: The authors studied the influence of alpha, beta, and dopaminergic catecholamines on blood volume expansion in conscious normovolemic sheep before, during, and after a bolus infusion of a %%%crystalloid%%%. Methods: A 0.9% NaCl bolus (24 ml/kg in 20 min) was infused in four paired experiments each: no drug, dopamine infusion (50 mug . kg-1 . min-1), isoproterenol infusion (0.1 mug . kg-1 . min-1), and phenylephrine infusion (3 mug . kg-1 . min-1). Blood volume expansion was calculated by the dilution of blood %%%hemoglobin%%% concentration. Results: Dopamine had little effect on peak blood volume expansion (12.7 +/- 0.9 ml/kg) compared with 0.9% NaCl (13.0 +/- 2.7 ml/kg); in contrast, isoproterenol augmented blood volume expansion (18.5 +/- 1.8 ml/kg), and phenylephrine reduced blood volume expansion (8.9 +/- 1.4 ml/kg). Two hours after the 0.9% NaCl bolus, sustained blood volume expansion was greatest in the isoproterenol protocol (12.2 ml/kg), whereas the dopamine protocol (6.8 ml/kg) remained similar to the control protocol (4.1 ml/kg), and the phertylephrine protocol had a net volume loss (-1.9 ml/kg). Some blood volume expansion differences were attributed to changes in renal function as phenylephrine infusion increased urinary output, whereas isoproterenol was associated with antidiuresis. However, dopamine caused diuresis and sustained augmentation of blood volume. Conclusion: Catecholamines can alter the intravascular volume expansion of fluid therapy. beta-Receptor (isoproterenol) stimulation augmented blood volume expansion, whereas a (phenylephrine) stimulation reduced blood volume expansion. Combined dopaminergic, beta, and possibly alpha stimulation with dopamine augmented blood volume expansion and cardiac output while inducing diuresis.

1/7/13
DIALOG(R)File 5:Biosis Previews(R)

17913237 BIOSIS NO.: 200400283994
Tissue antioxidant status in hemorrhaged swine resuscitated with %%%crystalloid%%% or colloid fluids
AUTHOR: Dubick Michael A (Reprint); Cameron David G; Sondeen Jill L
AUTHOR ADDRESS: US Army Institute of Surgical Research, 3400 Rawley E Chambers Ave, San Antonio, TX, 78234, USA**USA
AUTHOR E-MAIL ADDRESS: michael.dubick@amedd.army.mil
JOURNAL: FASEB Journal 18 (4-5): pAbst. 830.1 2004 2004
MEDIUM: e-file
CONFERENCE/MEETING: FASEB Meeting on Experimental Biology: Translating the Genome Washington, District of Columbia, USA April 17-21, 2004; 20040417
SPONSOR: FASEB
ISSN: 0892-6638 _(ISSN print)
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Concern has been raised that use of a %%%hemoglobin%%%-based oxygen carrier (HBOC) may exacerbate an oxidative stress associated with hemorrhage and shock. The present study evaluated antioxidant status in tissues from hemorrhaged swine resuscitated with lactated Ringer&39;s (LR), colloids such as Hespan and Hextend, or the HBOC, PolyHeme. Anesthetized swine (n= 6-7/gp) were hemorrhaged 20 ml/kg over 5 min, plus an additional 8 ml/kg at 30 min that coincided with fluid resuscitation

to achieve and maintain a systolic blood pressure of 80 mmHg. Lung, liver, kidney, duodenum and heart were harvested at the end of the experiment (210 min) or at death. Statistically significant differences in total antioxidant potential (TAP), Mn-superoxide dismutase (MnSOD) and glutathione reductase (GR) activities, and thiobarbituric acid reactive substances levels were observed in tissues among the resuscitation fluid groups. For example, in lung, TAP in PolyHeme treated animals was about 30% higher than in swine resuscitated with LR or Hextend, and MnSOD activity was 30 to 40% higher than the other groups. Only in kidney was GR activity lower in the PolyHeme than the Hextend group. No significant differences in 8-isoprostanes or nitrate/nitrite levels were observed among groups in any tissue. Taken together, these data indicate that in animals subjected to severe hemorrhage and resuscitated with up to 3 bags of PolyHeme, no significant pro-oxidant effects were observed in the tissues examined.

1/7/14
DIALOG(R)File 5:Biosis Previews(R)

17877551 BIOSIS NO.: 200400246498
A 44-year-old Jehovah's Witness with life-threatening anemia from uterine bleeding.
AUTHOR: Hashem Bassam; Dillard Thomas A (Reprint)
AUTHOR ADDRESS: Medical College of Georgia, 1120 15th St, Room BBR5513, Augusta, GA, 30912-3135, USA**USA
AUTHOR E-MAIL ADDRESS: T.Dillard@mail.mcg.edu
JOURNAL: Chest 125 (3): p1151-1154 March 2004 2004
MEDIUM: print
ISSN: 0012-3692 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: English

1/7/15
DIALOG(R)File 5:Biosis Previews(R)

17718951 BIOSIS NO.: 200400087720
New blood substitutes of polyfunctional action.
AUTHOR: Sofronov G A; Selivanov E A
JOURNAL: Vestnik Rossiiskoi Akademii Meditsinskikh Nauk (10): p48-51 2003 2003
MEDIUM: print
ISSN: 0869-6047
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian

ABSTRACT: The paper deals with two categories of new oxygen-carrying blood substitute solutions (OCBSS), based on a modified %%%hemoglobin%%% (MG) and perfluor-organic carbon emulsion (PCE), and with %%%crystalloid%%% and colloid blood substitutes of the antihypoxic action containing the Crebs' substrate (sodium fumarat). Described are the results of clinical use of Russian OCBSS based on MG (Gelenpol) and on PCE (Perftoran) in 151

patients with hemorrhagic shock and intraoperative blood loss. Both drugs are allowed for medical application in Russia. Gelenpol was administered at 1 to 6 units, perftoran - at 10-15 ml/kg. An improved oxygen status as well as normalization of hemodynamics, microcirculation, rheology, and of blood acid-base balance (ABB) were registered. Gelenpol had a hematosis-stimulating action. The combined use of both drugs or one of them alone in surgery is under discussion. The OCBSS efficiency can be enhanced when they are used jointly with the first Russian infusion antihypoxants containing sodium furmarat, i.e. Mufasol and Polyoxyfumarin. Both of them were shown to normalize the oxidation in tissues, to recover the mitochondrial metabolism in the liver and myocardium and to improve the blood ABB when used in hypovolemic and hypoxic conditions of different etiologies, in substituting for intraoperative blood losses (gastrointestinal hemorrhages), in polytrauma and destructive cholecystitis as well as in preoperative preparations of patients with diffuse peritonitis. The OCBSS preparations and antihypoxants are undoubtedly drugs of choice in emergency infusion-transfusion therapy and in cases of multiple victims from accidents.

1/7/16
DIALOG(R)File 5:Biosis Previews(R)

17669581 BIOSIS NO.: 200400040338
Reduction in Perioperative Blood Loss Following Surgery for Scoliosis: A Prospective, Randomized, Double Blind Examination of Epsilon Aminocaproic Acid.
AUTHOR: Florentino-Pineda Ivan (Reprint); Williams Dale E (Reprint); Thompson George H (Reprint)
AUTHOR ADDRESS: Department of Anesthesiology, University Hospitals of Cleveland, Cleveland, OH, USA**USA
JOURNAL: Anesthesiology Abstracts of Scientific Papers Annual Meeting (2003): pAbstract No. A-1451 2003 2003
MEDIUM: cd-rom
CONFERENCE/MEETING: 2003 Annual Meeting of the American Society of Anesthesiologists San Francisco, CA, USA October 11-15, 2003; 20031011
SPONSOR: American Society of Anesthesiologists
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Introduction: This study examined the impact of epsilon aminocaproic acid (EAA) on the perioperative blood loss that occurs with surgical correction of idiopathic scoliosis in adolescent patients. EAA was chosen as it is an antifibrinolytic that has been shown to reduce perioperative blood loss in other populations1,2. Methods: Adolescent patients scheduled for the elective correction of idiopathic scoliosis were recruited for this prospective, randomized, double-blind, IRB approved study. A total of 36 patients participated (with parental consent and patient assent); their ages ranged from 11 to 18 years. Subjects were randomly assigned to either the treatment group (in which case they received EAA) or a comparison group. Data included: patient age, gender, height, weight, and estimated blood volume; preoperative hematocrit and %%%hemoglobin%%%; the number of autologous units of whole blood donated preoperatively; the number of vertebrae fused; operative

time; estimated intraoperative blood loss; the fluids given intra-operatively (%%%crystalloid%%%, colloid, and blood products); postoperative suction drainage; and the postoperative transfusion requirements. Results: Nineteen patients received EAA and 17 were in the control group. Analysis of variance detected no statistically significant differences between groups preoperatively. Total perioperative blood loss was statistically less in the EAA group (1,389 ml vs. 1,720 ml; p ltoreq 0.05) Further, postoperative %%%hemoglobin%%% (8.4 gm/dL vs. 7.2 gm/dL; p < 0.001) and hematocrits (25.2% vs. 21.8%; p < 0.001) were significantly higher in the Amicar group while total autologous blood transfusions were lower (1.0 unit vs. 1.6 units; p ltoreq 0.05). Discussion:This study corroborates a previous retrospective finding of the effectiveness of EAA in the reduction of perioperative blood loss in patients undergoing idiopathic scoliosis repair 3. This led to a significantly reduced need for blood transfusion. Thus, the use of EAA may decrease the need for preoperative autologous blood donations. .

1/7/17
DIALOG(R)File 5:Biosis Previews(R)

17643853 BIOSIS NO.: 200400010837
Relationship between the Amount of Cell Saver Blood Transfused and Partial Thromboplastin Time (PTT) in Liver Transplant Patients.
AUTHOR: Stapelfeldt Wolf H (Reprint); Willingham Darrin L (Reprint); Ghazi Salim M (Reprint); Peiris Prith (Reprint); Redmon Valerie W (Reprint)
AUTHOR ADDRESS: Division of Transplant Anesthesiology, Mayo Clinic Jacksonville, Jacksonville, FL, USA**USA
JOURNAL: Anesthesiology Abstracts of Scientific Papers Annual Meeting (2003): pAbstract No. A-150 2003 2003
MEDIUM: cd-rom
CONFERENCE/MEETING: 2003 Annual Meeting of the American Society of Anesthesiologists San Francisco, CA, USA October 11-15, 2003; 20031011
SPONSOR: American Society of Anesthesiologists
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Clinical coagulopathy is occasionally encountered during the later phases of liver transplant (OLT) surgical procedures despite the presence of an adequate TEG(R) and near normothermic conditions, particularly in patients who have experienced substantial hemorrhage. The present study was designed to examine the relationship between the amount of cell saver returned to the patient and coagulation test results obtained over the course of orthotopic liver transplant (OLT) procedures. Methods: 288 consecutive OLT patients were included between February 1998 and December 2000. Patients who received cell saver blood were divided into two groups: those with cell saver amounts up to 500 cc (n=116, average 326+-10 cc) and those with cell saver amounts exceeding 500 cc (n=87, average 1332+-106 cc). Cumulative amounts of blood products given and intraoperative laboratory test (%%%hemoglobin%%%, PT, PTT, celite-activated TEG) results obtained at six defined intraoperative time points were analyzed for significant (p<0.05) differences or relationships by means of ANOVA or multiple regression, and expressed as mean+-SEM. Results: 203 out of 288 (70%) patients received cell saver blood. As would be expected, the group of patients receiving larger cell

saver amounts also required more PRBCs, FFP, cryoprecipitate, platelets, %%%crystalloid%%%, and albumin over the course of their transplant case ($p<0.05$ each). Interestingly, while the initial %%%hemoglobin%%% and PT differences between both groups gradually disappeared over the course of the procedure (a result of the greater blood product transfusions), PTT differences actually worsened and were most prominent at the end of the procedure:There were no corresponding differences in celite-activated TEG R and R+K times between groups at the same times. Three independent factors significantly determined the final PTT: 1) the patient's baseline PTT (BPTT); 2) the cumulative amount of cryoprecipitate transfused; and most significantly, 3) the amount of cell saver blood returned: This suggests that the use of salvaged red blood cells contributed to a gradual prolongation of the PTT over the course of the procedure by an average 12.1 seconds per liter of cell saver blood returned. Conclusion: A significant relationship existed between the amount of cell saver blood returned and the final PTT observed in OLT cases. This effect was not accompanied by any detectable changes in celite-activated TEG reaction and coagulation times. Given this observation, it may be prudent to include PTT in routine coagulation monitoring during OLT (besides TEG) and consider the administration of protamine when clinical coagulopathy and an elevated PTT are encountered in connection with significant prior cell saver usage.

1/7/18
DIALOG(R)File 5:Biosis Previews(R)

17402120 BIOSIS NO.: 200300360839
Both primary and secondary abdominal compartment syndrome can be predicted early and are harbingers of multiple organ failure.
AUTHOR: Balogh Zsolt; McKinley Bruce A; Holcomb John B; Miller Charles C; Cocanour Christine S; Kozar Rosemary A; Valdivia Alicia; Ware Drue N; Moore Frederick A (Reprint)
AUTHOR ADDRESS: Department of Surgery, UT-Houston Medical School, 6431 Fannin, Suite 4.264, Houston, TX, 77030, USA**USA
AUTHOR E-MAIL ADDRESS: frederick.a.moore@uth tmc.edu
JOURNAL: Journal of Trauma Injury Infection and Critical Care 54 (5): p 848-861 May 2003 2003
MEDIUM: print
ISSN: 1079-6061
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Primary (1degree) abdominal compartment syndrome (ACS) is a known complication of damage control. Recently secondary (2degree) ACS has been reported in patients without abdominal injury who require aggressive resuscitation. The purpose of this study was to compare the epidemiology of 1degree and 2degree ACS and develop early prediction models in a high-risk cohort who were treated in a similar fashion. Methods: Major torso trauma patients underwent standardized resuscitation and had prospective data collected including occurrence of ACS, demographics, ISS, urinary bladder pressure, gastric tonometry (GAPCO2 = gastric regional CO2 minus end tidal CO2), laboratory, respiratory, and hemodynamic data. With 1degree and 2degree ACS as endpoints, variables were tested by uni- and multivariate logistic

analysis (MLA). Results: From 188 study patients during the 44-month period, 26 (14%) developed ACS-11 (6%) were 1degree ACS and 15 (8%) 2degree ACS. 1degree and 2degree ACS had similar demographics, shock, and injury severity. Significant univariate differences included: time to decompression from ICU admit (600 +- 112 vs. 360 +- 48 min), Emergency Department (ED) %%%crystalloid%%% (4 +- 1 vs. 7 +- 1 L), preICU %%%crystalloid%%% (8 +- 1 vs. 12 +- 1L), ED blood administration (2 +- 1 vs. 6 +- 1 U), GAPCO2 (24 +- 3 vs. 36 +- 3 mmHg), requiring pelvic embolization (9 vs. 47%), and emergency operation (82% vs. 40%). Early predictors identified by MLA of 1degree ACS included %%%hemoglobin%%% concentration, GAPCO2, temperature, and base deficit; and for 2degree ACS they included %%%crystalloid%%%, urinary output, and GAPCO2. The areas under the receiver-operator characteristic curves calculated upon ICU admission are 1degree = 0.977 and 2degree = 0.983. 1degree and 2degree ACS patients had similar poor outcomes compared with nonACS patients including ventilator days (1degree = 13 +- 3 vs. 2degree = 14 +- 3 vs. nonACS = 8 +- 2), multiple organ failure (55% vs. 53% vs. 12%), and mortality (64% vs. 53% vs. 17%). Conclusion: 1degree and 2degree ACS have similar demographics, injury severity, time to decompression from hospital admit, and bad outcome. 2degree ACS is an earlier ICU event preceded by more %%%crystalloid%%% administration. With appropriate monitoring both could be accurately predicted upon ICU admission.

1/7/19
DIALOG(R)File 5:Biosis Previews(R)

17168163 BIOSIS NO.: 200300125273
The influence of %%%crystalloid%%% and colloid replacement solutions in acute normovolemic hemodilution: A preliminary survey of hemostatic markers.
AUTHOR: Jones Stephanie B; Whitten Charles W (Reprint); Despotis George J; Monk Terri G
AUTHOR ADDRESS: Department of Anesthesiology and Pain Management, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Blvd., Dallas, TX, 75390-9068, USA**USA
AUTHOR E-MAIL ADDRESS: charles.whitten@utsouthwestern.edu
JOURNAL: Anesthesia and Analgesia 96 (2): p363-368 February 2003 2003
MEDIUM: print
ISSN: 0003-2999
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Acute normovolemic hemodilution (ANH), in which blood for autologous use is collected immediately before the onset of surgical blood loss, is a recommended autologous blood procurement technique for blood conservation. Both %%%crystalloid%%% and colloid replacement fluids have been used to maintain normovolemia during ANH, but few data are available to justify the use of a particular replacement fluid. Therefore, we designed a prospective, randomized study to determine if the replacement fluid choice affects various coagulation variables and perioperative blood loss. Forty adult patients, ASA physical status 1-3, scheduled for ANH during radical prostatectomy were randomly assigned to one of four replacement fluid groups: (a) Ringer's lactate, (b) 5% albumin, (c) 6% dextran 70 (DEX), or (d) 6% hetastarch (HES). After the

induction of a standardized general anesthetic, all patients underwent ANH to a final %%%hemoglobin%%% level of 9 g/dL. Complete blood count, prothrombin time, partial thromboplastin time, fibrinogen, factors V and VIII levels, bleeding time, and thromboelastography (TEG(R)) measurements were obtained at similar time points in the procedure. When compared with baseline, activated partial thromboplastin time decreased and factor VIII levels increased in the postanesthesia care unit in both the Ringer's lactate and 5% albumin groups. The DEX and HES groups demonstrated a decrease in TEG(R) maximum amplitude between preoperative and postanesthesia care unit measurements and TEG(R) alpha (angle) was decreased from baseline in the DEX group. The changes in factor VIII, activated partial thromboplastin time, and TEG(R) measurements indicate that HES and DEX may attenuate the hypercoagulability related to surgery.

17150799 BIOSIS NO.: 200300109518
Small Volumes of Hypertonic Saline Prevent Arterial Hypotension after Spinal Anesthesia.
AUTHOR: Yondov Dimitar (Reprint); Tchervenivanov Nikola (Reprint); Lee Julia (Reprint); Kapural Leonardo (Reprint); Tetzlaff John (Reprint)
AUTHOR ADDRESS: Division of Anesthesiology and Intensive Care, The Cleveland Clinic Foundation, Cleveland, OH, USA**USA
JOURNAL: Anesthesiology Abstracts of Scientific Papers Annual Meeting (2001): pAbstract No. A-923 2002 2002
MEDIUM: cd-rom
CONFERENCE/MEETING: 2001 Annual Meeting of the American Society of Anesthesiologists New Orleans, LA, USA October 13-17, 2001; 20011013
SPONSOR: American Society of Anesthesiologists Inc.
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Introduction: Indications for hypertonic NaCl infusion for prophylaxis of arterial hypotension (AH) after spinal anesthesia (SA) are still being investigated 1,2,3. We examined the hypothesis that small volume pre-operative NaCl 10% will maintain arterial blood pressure after SA. Materials and Methods: A prospective, single-blinded, randomized, clinical trial was conducted to compare pre-operative administration of NaCl 10% (HS group) to NaCl 0.9 % (NS group) in patients who underwent inguinal hernia repair. Subarachnoid block was achieved by Lidocaine 50 mg and Fentanyl 50 mug. In HS group (n=24) NaCl 10%, 1 ml/kg/bw was administered immediately before and after SA. The NS group (n=24) was given NaCl 0.9 % 5-7 ml/kg/bw. Administration of NS continued following SA up to a total of 1500 ml. AH was defined as a decrease in MAP of more than 30% compared to baseline. Vasopressors were not administered unless AH occurred. Bradycardia (HR<50 bpm) was treated with atropine. Systolic and diastolic blood pressures were measured for an hour in 5 min. intervals. Serum sodium (Na) and %%%hemoglobin%%% (Hg) were determined initially, at 10 min after SA and at the end of the surgery. Other parameters monitored included dermatomal level of SA, pulse rate, time to urination, incidence of headache and bradycardia, ASA class and time for prehydration. MAP percent changes over time between the two treatment groups were compared using a repeated measures analysis. The model

included treatment groups, baseline MAP, duration of surgery, and time main effects. Unpaired t-test and chi-square tests were used where appropriate. Results are presented as means+-SD. Results: The two groups of patients were comparable at baseline. Surgery was accompanied by minimal blood loss in all cases. No vasopressors were required. Incidence of bradycardia was equal in both groups (8 vs. 8). NS group had significantly larger percent change from baseline MAP at 30 min. time point (mm Hg, NS 118+-15 vs. HS 125+-17,p=0.03, least square means). The comparison of group difference over time had a p value of 0.07. Changes of SBP and DBP showed similar results. A transient increase of serum Na was observed after the second dose of HS (mmol/L, 139+-4 vs. 147+-8, p<0.05). Hemodilution was observed in HS group at 10 min. post SA (g/dL, NS 14.2+-9.2 vs. HS 12.9+-1.7, p<0.001). No statistically significant difference, however, was found between the two treatment groups in either Na (mmol/L, NS 140.7+-3.2 vs. HS 140.1+-5.3) or Hg (g/dL, NS 13.3+-1.4 vs. HS 13.1+-1.4) at the end of the observation period. Time for prehydration was significantly less in HS group (4.2+-1.46 min. vs. 27.9+-5.9 min.; p<0.05). One case of urinary retention was observed in the NS group. Eleven (46%) of the HS patients experienced burning sensation along the infusion vein during administration of hypertonic saline. Conclusion: Our results indicate that a single bolus dose of NaCl 10% administered preoperatively at a dose of 2 ml/kg/bw might be a safe alternative to a normoosmolar %%%crystalloid%%% infusion. HS is as effective as much larger volumes of NS in maintaining arterial blood pressure during surgical interventions with short duration and minimal blood loss. HS infusion requires significantly less time for prehydration. Although the clinical relevance of these results in patients with different co-morbidities should be established in future studies, application of HS should be considered as a practical option to the standard prehydration practices.

1/7/21
DIALOG(R)File 5:Biosis Previews(R)

17149881 BIOSIS NO.: 200300108600
Effects of Catecholamines on Volume Expansion and Hemodynamic Responses of %%%Crystalloid%%% Infusion.
AUTHOR: Vane Luiz A (Reprint); Prough Donald S (Reprint); Williams Chad A (Reprint); Kramer George C (Reprint)
AUTHOR ADDRESS: Departments of Anesthesiology and Physiology, The University of Texas Medical Branch, Galveston, TX, USA**USA
JOURNAL: Anesthesiology Abstracts of Scientific Papers Annual Meeting (2002): pAbstract No. A-678 2002 2002
MEDIUM: cd-rom
CONFERENCE/MEETING: 2002 Annual Meeting of the American Society of Anesthesiologists Orlando, FL, USA October 12-16, 2002; 20021012
SPONSOR: American Society of Anesthesiologists Inc.
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Introduction: Critically ill patients are routinely treated with infusions of crystalloids and catecholamines in order to increase vascular volume and alter cardiovascular function-with a clinical goal of increasing cardiac output. However, interactions between fluid therapy

and the effects of catecholamines remain poorly defined. We studied how alpha-adrenergic, beta-adrenergic, and dopaminergic catecholamines affected blood volume (BV) expansion in conscious normovolemic sheep before, during, and after a bolus infusion of normal saline 0.9%NaCl (NS). Methods: Six instrumented, splenectomized, conscious sheep were subjected to a bolus infusion (24 ml/kg in 20 min) of NS in 4 paired experiments each. Groups were a no drug control, dopamine (50 mug/kg/min), isoproterenol (0.1 mug/kg/min), and phenylephrine (3 mug/kg/min). Catecholamine infusions were started 30 min before the NS bolus infusion and maintained for 3 h thereafter. Experiments were separated by at least 2 days. BV expansion was calculated by dilution of blood %%%hemoglobin%%% concentration from estimated normal BV (65 ml/kg). Results: Compared to the peak BV expansion after the NS bolus in controls (13.0+-2.7 ml/kg), dopamine had little effect (12.7+-0.9 ml/kg) and isoproterenol augmented peak BV expansion (18.5+-1.8* ml/kg), while phenylephrine reduced it (8.5*+-1.1 ml/kg; *p < 0.05 paired t test). Sustained BV expansion at 2 h after the bolus was greatest with the isoproterenol group (12.4*+- 0.8 ml/kg), but also occurred with the dopamine group (6.6+-1.4 ml/kg) compared to NS (4.2+-1.0 ml/kg), while the phenylephrine group had a BV net loss of (-1.5*+-0.8 ml/kg). Some of these differences were caused by altered renal function as phenylephrine resulted in a diuresis, while isoproterenol caused an anti-diuresis. However, dopamine caused both a diuresis and a sustained augmentation of BV. Discussion: Infusion of catecholamines altered not only hemodynamic responses but also the volume retention of fluid therapy. Beta-adrenergic stimulation augmented BV expansion, while alpha-adrenergic stimulation reduced BV expansion. Combined dopaminergic and beta-adrenergic stimulation with dopamine augmented BV expansion and cardiac output while inducing diuresis. Optimization of hemodynamics in critically ill patients may benefit from an increased understanding of the interactions between volume therapy and adrenergic and dopaminergic actions. Supported by Shriners' Hospitals of North American, Grant 8720.

17040787 BIOSIS NO.: 200200634298
%%%Crystalloid%%% inclusions in the cytoplasm of alveolar macrophages of the SWR/J mouse: A possible cause of susceptibility to Mycobacterium tuberculosis?
AUTHOR: Turner Oliver C (Reprint); Sugawara Isamu; Yamada Hiroyuki; Cummings Bruce; Orme Ian M (Reprint)
AUTHOR ADDRESS: Department of Microbiology, Colorado State University, Fort Collins, CO, 80523, USA**USA
JOURNAL: Tuberculosis (Edinburgh) 82 (2-3): p134 2002 2002
MEDIUM: print
CONFERENCE/MEETING: 36th Annual Research Conference of the US-Japan Cooperative Medical Science Program Tuberculosis and Leprosy Panel Louisiana, USA July 15-17, 2001; 20010715
ISSN: 1472-9792
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
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LANGUAGE: English

1/7/23
DIALOG(R)File 5:Biosis Previews(R)

16989746 BIOSIS NO.: 200200583257
Improved myoglobin saturation measurement made by partial least-squares analysis of optical reflectance spectra
AUTHOR: Schenkman Kenneth A (Reprint); Ciesielski Wayne A
AUTHOR ADDRESS: Departments of Anesthesiology, Pediatrics, and Bioengineering, University of Washington, Seattle, WA, 98105, USA**USA
JOURNAL: Applied Spectroscopy 56 (9): p1215-1221 September, 2002 2002
MEDIUM: print
ISSN: 0003-7028
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Accurate myoglobin oxygen saturation determination from tissue using optical spectral analysis has been limited by overlap in spectral features between myoglobin and %%%hemoglobin%%%. Partial least-squares analysis of reflectance spectra has been successfully used to predict myoglobin oxygen saturation from blood perfused hearts, although uncertainty remains as to how much error in the myoglobin saturation estimate occurs due to %%%hemoglobin%%% contamination. This study was undertaken to quantify the error due to %%%hemoglobin%%% in the partial least-squares estimate of myoglobin saturation. Calibration spectra were developed by mathematical addition of individually acquired in vitro reflectance spectra from various absorbing species in scattering media. The isolated perfused guinea pig heart model was used to allow for switching between %%%crystalloid%%% and red blood cell perfusion in a beating heart. Inclusion of cytochrome c and cytochrome oxidase in a calibration set containing %%%hemoglobin%%% and myoglobin improved the accuracy of the partial least-squares analysis of myoglobin saturation. Both the Mahalanobis distance test and the residual ratio test demonstrated improved representation of spectra obtained from the heart using a calibration set that included both cytochromes. A 4.3% error in myoglobin oxygen saturation measurements was determined.

1/7/24
DIALOG(R)File 5:Biosis Previews(R)

16980884 BIOSIS NO.: 200200574395
Prediction of pulmonary arterial wedge pressure from arterial pressure or pulse oximetry plethysmographic waveform
AUTHOR: Xu Haifang (Reprint); Zhou Shu; Ma Wei; Yu Buwei
AUTHOR ADDRESS: Department of Anesthesiology, Ruijin Hospital, Shanghai Second Medical University, Shanghai, 200025, China**China
JOURNAL: Chinese Medical Journal (English Edition) 115 (9): p1372-1375 September, 2002 2002
MEDIUM: print
ISSN: 0366-6999
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: To assess the possibility of using arterial pressure waveform or pulse oximetry plethysmographic waveform variation to estimate the pulmonary arterial wedge pressure (PAWP). Methods: Fourteen American Society of Anesthesiologists grade I-II patients aged 33-69 years and weighing 62.0+-9.5 kg scheduled for elective abdominal tumor surgery were studied. Their %%%hemoglobin%%% exceeded 120 g/L and hematocrit exceeded 35%. Pre-operative acute hypervolemic hemodilution was applied immediately after general anesthestic induction and tracheal intubation. PAWP, systolic pressure variation (SPV), delta down (dDown), SPVplet, dDownplet and other hemodynamic parameters were measured and recorded when total fluid volume (%%%crystalloid%%% and colloid) infused reached 10 ml/kg and 20 ml/kg and again at the end of the operation. Central venous pressure was maintained at 10-12 mm Hg during operation. Systolic blood pressure at the end of Valsalva maneuver (airway pressure was kept at 22 mm Hg) and the systolic pressure before the Valsalva manoeuvre during apnea were used to calculate arterial pressure ratio (APR). Results: APR, SPV, dDown, SPVplet and dDownplet all correlated well with PAWP (r=0.717, -0.695, -0.680, -0.522 and -0.624 respectively, P<0.01). There was a closer linear correlation between APR and PAWP than between the other parameters. The regression equation was PAWP (mm Hg)=0.207XAPR (%)-0.382. Conclusion: During positive pressure mechanical ventilation, APR, SPV, dDown, SPVplet and dDownplet can be used to estimate PAWP effectively.

16758669 BIOSIS NO.: 200200352180
Kinetics of isotonic and hypertonic plasma volume expanders
AUTHOR: Drobin Dan (Reprint); Hahn Robert G
AUTHOR ADDRESS: Department of Anesthesiology, Soder Hospital, S-118 83, Stockholm, Sweden**Sweden
JOURNAL: Anesthesiology (Hagerstown) 96 (6): p1371-1380 June, 2002 2002
MEDIUM: print
ISSN: 0003-3022
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Major differences in plasma volume expansion between infusion fluids are fairly well known, but there is a lack of methods that express their dynamic properties. Therefore, a closer description enabled by kinetic modeling is presented. Methods: Ten healthy male volunteers received, on different occasions, a constant-rate intravenous infusion over 30 min consisting of 25 ml/kg of 0.9% saline, lactated Ringer's solution, acetated Ringer's solution, 5 ml/kg of 7.5% saline, or 3 ml/kg of 7.5% saline in 6% dextran. One-, two-, and three-volume kinetic models were fitted to the dilution of the total venous %%%hemoglobin%%% concentration over 240 min. Osmotic fluid shifts were considered when hypertonic fluid was infused. Results: All fluids induced plasma dilution, which decreased exponentially after the infusions. The ratio of the area under the dilution-time curve and the infused fluid volume showed the following average plasma-dilution dose-effect (efficiency), using 0.9% saline as the reference (= 1): lactated Ringer's solution, 0.88; acetated Ringer's solution, 0.91; hypertonic saline,

3.97; and hypertonic saline in dextran, 7.22 ("area approach"). Another comparison, based on kinetic analysis and simulation, showed that the strength of the respective fluids to dilute the plasma by 20% within 30 min was 0.94, 0.97, 4.44, and 6.15 ("target dilution approach"). Between-subject variability was approximately half as high for the latter approach. Conclusions: The relative efficiency of %%%crystalloid%%% infusion fluids differs depending on whether the entire dilution-time profile or only the maximum dilution is compared. Kinetic analysis and simulation is a useful tool for the study of such differences.

1/7/26
DIALOG(R)File 5:Biosis Previews(R)

16748773 BIOSIS NO.: 200200342284
Volume kinetic analysis of the distribution of 0.9% saline in conscious versus isoflurane-anesthetized sheep
AUTHOR: Brauer Kirk I; Svensen Christer; Hahn Robert G; Traber Lilian D; Prough Donald S (Reprint)
AUTHOR'ADDRESS: Department of Anesthesiology, University of Texas Medical Branch, 301 University Boulevard, Galveston, TX, 77555-0591, USA**USA
JOURNAL: Anesthesiology (Hagerstown) 96 (2): p442-449 February, 2002 2002
MEDIUM: print
ISSN: 0003-3022
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: The distribution and elimination of 0.9% saline given by intravenous infusion has not been compared between the conscious state and during inhalational anesthesia. Methods: Six adult sheep received an intravenous infusion of 25 ml/kg of 0.9% saline over 20 min in the conscious state and also during isoflurane anesthesia and mechanical ventilation. The distribution and elimination of infused fluid were studied by volume kinetics based on serial analysis of %%%hemoglobin%%% dilution in arterial blood and by mass balance that incorporated volume calculations derived from volume kinetic analysis and measurements of urinary volumes. Results: The mass balance calculations indicated only minor differences in the time course of plasma volume expansion between the conscious and anesthetized states. However, isoflurane anesthesia markedly reduced urinary volume (median, 9 vs. 863 ml; P<0.03). In conscious sheep, the central and peripheral volume expansion predicted by volume kinetics agreed well with the calculations based on mass balance. However, during isoflurane anesthesia and mechanical ventilation, calculation using volume kinetic analysis of the variable kr, an elimination factor that, in conscious humans and sheep, is closely related to urinary excretion, represented both urinary excretion and peripheral accumulation of fluid. This suggests that the previous assumption that kr approximates urinary excretion of infused fluid requires modification, i.e., kr simply reflects net fluid movement out of plasma. Conclusions: In both conscious and anesthetized, mechanically ventilated sheep, infusion of 0.9% saline resulted in minimal expansion of plasma volume over a 3-h interval. In conscious sheep, infused 0.9% saline was rapidly eliminated from the plasma volume by urinary excretion; in contrast, the combination of isoflurane anesthesia and mechanical ventilation reduced urinary excretion and promoted peripheral

accumulation of fluid.

1/7/27
DIALOG(R)File 5:Biosis Previews(R)

16663546 BIOSIS NO.: 200200257057
Albumin extravasation and tissue washout of hyaluronan after plasma volume expansion with %%%crystalloid%%% or hypooncotic colloid solutions
AUTHOR: Berg S; Golster M; Lisander B (Reprint)
AUTHOR ADDRESS: Dept. of Anaesthesiology, University Hospital, S-581 85, Linkoping, Sweden**Sweden
JOURNAL: Acta Anaesthesiologica Scandinavica 46 (2): p166-172 February, 2002 2002
MEDIUM: print
ISSN: 0001-5172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Intravascular volume expansion is followed by loss of fluid from the circulation. The extravasation of albumin in this readjustment is insufficiently known. Methods: Twelve male volunteers participated, each in three separate sessions, in a controlled, randomised, open fashion. They received one of the following: albumin 40 g/L, (7.1 mL/kg, i.e. 500 mL per 70 kg); Ringer's acetate (21.4 mL/kg), or dextran 30 g/L (7.1 mL/kg). The fluids were infused during 30 min and the subjects were followed for 180 min. ECG, arterial oxygen saturation and non-invasive arterial pressure were recorded. Haemoglobin, haematocrit, serum albumin and osmolality, plasma colloid osmotic pressure and hyaluronan concentration were determined in venous samples. Results: The serum albumin concentration decreased ($P < 0.05$, ANOVA) following Ringer's acetate or dextran, whereas serum osmolality was unchanged in all groups. The colloid osmotic pressure decreased ($P < 0.05$) after the Ringer solution. The blood volume increase was estimated from the decrease in haemoglobin concentration and did not differ between the three fluids. The cumulated extravasation of albumin was largest following albumin (10.4 +- 5.4 g, mean +- SD), less following dextran (5.6 +- 5.0 g) and negligible in the Ringer group (0.5 +- 10.0 g; $P < 0.05$ against albumin). However, the Ringer solution increased the plasma concentration of hyaluronan drastically. Conclusions: Infusion of hypotonic colloidal solutions entails net loss of albumin from the vascular space. This is not the case after Ringer's acetate. Increased interstitial hydration from the latter fluid is followed by lymphatic wash out of hyaluronan.

1/7/28
DIALOG(R)File 5:Biosis Previews(R)

16260162 BIOSIS NO.: 200100432001
Dilution and redistribution effects of rapid 2-litre infusions of 0.9% (w/v) saline and 5% (w/v) dextrose on haematological parameters and serum biochemistry in normal subjects: A double-blind crossover study
AUTHOR: Lobo Dileep N (Reprint); Stanga Zeno; Simpson J Alastair D;

Anderson John A; Rowlands Brian J; Allison Simon P
AUTHOR ADDRESS: Section of Surgery, University Hospital, Queen's Medical Centre, Nottingham, NG7 2UH, UK**UK
JOURNAL: Clinical Science (London) 101 (2): p173-179 August, 2001 2001
MEDIUM: print
ISSN: 0143-5221
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RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Although hypoalbuminaemia after injury may result from increased vascular permeability, dilution secondary to %%%crystalloid%%% infusions may contribute significantly. In this double-blind crossover study, the effects of bolus infusions of crystalloids on serum albumin, haematocrit, serum and urinary biochemistry and bioelectrical impedance analysis were measured in healthy subjects. Ten male volunteers received 2-litre infusions of 0.9% (w/v) saline or 5% (w/v) dextrose over 1 h; infusions were carried out on separate occasions, in random order. Weight, haemoglobin, serum albumin, serum and urinary biochemistry and bioelectrical impedance were measured pre-infusion and hourly for 6 h. The serum albumin concentration fell in all subjects (20% after saline; 16% after dextrose) by more than could be explained by dilution alone. This fall lasted more than 6 h after saline infusion, but values had returned to baseline 1 h after the end of the dextrose infusion. Changes in haematocrit and haemoglobin were less pronounced (7.5% after saline; 6.5% after dextrose). Whereas all the water from dextrose was excreted by 2 h after completion of the infusion, only one-third of the sodium and water from the saline had been excreted by 6 h, explaining its persistent diluting effect. Impedances rose after dextrose and fell after saline ($P<0.001$). Subjects voided more urine (means 1663 and 563 ml respectively) of lower osmolality (means 129 and 630 mOsm/kg respectively) and sodium content (means 26 and 95 mmol respectively) after dextrose than after saline ($P<0.001$). While an excess water load is excreted rapidly, an excess sodium load is excreted very slowly, even in normal subjects, and causes persistent dilution of haematocrit and serum albumin. The greater than expected change in serum albumin concentration when compared with that of haemoglobin suggests that, while dilution is responsible for the latter, redistribution also has a role in the former. Changes in bioelectrical impedance may reflect the electrolyte content rather than the volume of the infusate, and may be unreliable for clinical purposes.

1/7/29
DIALOG(R)File 5:Biosis Previews(R)

16241229 BIOSIS NO.: 200100413068
Primary oxalosis: Rare differential diagnosis in bone marrow pathology
AUTHOR: Otto M (Reprint); Koehler H H (Reprint); Bittinger F (Reprint); Kriegsmann J (Reprint); Kirkpatrick C J (Reprint)
AUTHOR ADDRESS: Institut fuer Pathologie, Johannes Gutenberg-Universitaet Mainz, Mainz, Germany**Germany
JOURNAL: Pathology Research and Practice 197 (5): p306 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 85th Meeting of the German Society of Pathology Muenster, Germany June 06-09, 2001; 20010606

SPONSOR: German Society of Pathology
ISSN: 0344-0338
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

1/7/30
DIALOG(R)File 5:Biosis Previews(R)

16216557 BIOSIS NO.: 200100388396
Minimising blood loss during radical prostatectomy by minimal intraoperative fluid administration
AUTHOR: Shahin O (Reprint); Studer U E (Reprint)
AUTHOR ADDRESS: Department of Urology, University of Berne, Berne, Switzerland**Switzerland
JOURNAL: European Urology 39 (Suppl. 5): p91 March, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: XVIth Congress of the European Association of Urology Geneva, Switzerland April 07-10, 2001; 20010407
SPONSOR: European Association of Urology
ISSN: 0302-2838
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

1/7/31
DIALOG(R)File 5:Biosis Previews(R)

16170892 BIOSIS NO.: 200100342731
The effect of priming techniques of ultrafiltrators on blood rheology: An in vitro evaluation
AUTHOR: Glogowski Kimberly R (Reprint); Stammers Alfred H; Niimi Kevin S; Tremain Kimberly D; Muhle Michelle L; Trowbridge Cody C
AUTHOR ADDRESS: 1700 W. Hickory Grove Road, Bldg 3 Apt 102, Dunlap, IL, 41525, USA**USA
JOURNAL: Perfusion (London) 16 (3): p221-228 May, 2001 2001
MEDIUM: print
ISSN: 0267-6591
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The increased interest of using ultrafiltration during cardiopulmonary bypass (CPB) has mandated a re-evaluation of the hematological effects of this blood conservation process. 'Rinse-free' ultrafiltrators can be primed using either %%%crystalloid%%% or blood prior to use. It is unknown whether one priming technique results in superior results in ultrafiltration quality. An in vitro circuit was designed to evaluate the Sorin/COBE HC1400 (n=6), the Lifestream HC70 (n=6), and the Terumo/Sarns HC11 (n=6). All test conditions were conducted at a blood flow rate of 250 ml/min and a transmembrane pressure of 250 mmHg. Samples were drawn and analyzed at four distinct time points for hematocrit, total protein, plasma free %%%hemoglobin%%%,

interleukin-6 (IL-6), interleukin-8 (IL-8), and tumor necrosis factor-alpha (TNFalpha). The HC11 had significantly greater percent increases in hematocrit under the blood priming protocol (29.2 +- 7.9) than either the HC1400 (11.0 +- 7.8, p < 0.03) or the HC70 (11.9 +- 7.8, p < 0.04). When %%%crystalloid%%% priming was compared to blood priming, the HC1400 and HC70 produced significant percent increases in hematocrit and total protein levels. The HC1400 devices produced significantly less plasma free %%%hemoglobin%%% when primed with %%%crystalloid%%% rather than blood (43.6 +- 38.3 vs 21.3 +- 5.6, p < 0.01). There were no significant differences between devices or priming techniques for IL-6, IL-8 or TNFalpha levels. In conclusion, the efficiency of the ultrafiltrators was elevated when primed with %%%crystalloid%%% before use. Cytokine levels were relatively unchanged with priming techniques, while plasma free %%%hemoglobin%%% levels were reduced with those devices previously primed with %%%crystalloid%%%.

1/7/32
DIALOG(R)File 5:Biosis Previews(R)

16143659 BIOSIS NO.: 200100315498
Utility and limitations of near-infrared spectroscopy during cardiopulmonary bypass in a piglet model
AUTHOR: Sakamoto Takahiko; Jonas Richard A (Reprint); Stock Ulrich A; Hatsuoka Shin'ichi; Cope Mark; Springett Roger J; Nollert Georg
AUTHOR ADDRESS: Department of Cardiac Surgery, Children's Hospital, 300 Longwood Avenue, Boston, MA, 02115, USA**USA
JOURNAL: Pediatric Research 49 (6): p770-776 June, 2001 2001
MEDIUM: print
ISSN: 0031-3998
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Near-infrared spectroscopy assessment of cytochrome oxygenation could be a valuable technique to monitor cerebral intraneuronal oxygen delivery during cardiopulmonary bypass. However, the validity of the cytochrome signal has been questioned as it could easily be overwhelmed by the Hb signal. Five- to six-week-old control piglets (n = 5) underwent cardiopulmonary bypass at 37degreeC. Study animals (n = 10) received 100 mg/kg of sodium cyanide to uncoupled cytochrome from Hb. Hematocrit was then decreased in steps of 5% from 35 to 5% with %%%crystalloid%%% hemodilution. In study piglets, the initiation of cardiopulmonary bypass was associated with oxygenated Hb increasing from 0 to 62.9 +- 25.6 muM times the differential path-length factor, and oxidized cytochrome a,a3 increasing to 1.9 +- 1.8 muM times the differential path-length factor. Cyanide caused oxygenated Hb to increase further to 132.3 +- 48.9 muM times the differential path-length factor, and oxidized cytochrome c decreased to -7.0 +- 2.6 muM times the differential path-length factor as anticipated, confirming uncoupling of electron transport. However, hemodilution subsequently resulted in linear decreases in oxidized cytochrome a,a3 (F = 8.57, p < 0.001) suggesting important cross-talk between the Hb and cytochrome signals as cytochrome is only intracellular. In control piglets, tissue oxygenation index showed a positive correlation with pump flow (r = 0.986, p = 0.013). The cytochrome signal as presently measured by near-infrared spectroscopy is

highly dependent on hematocrit.

1/7/33
DIALOG(R)File 5:Biosis Previews(R)

15858044 BIOSIS NO.: 200100029883
[Influences and predictors of unanticipated admission after ambulatory surgery]
ORIGINAL LANGUAGE TITLE: Einflussfaktoren und Praediktoren fuer die ungeplante stationaere Aufnahme tageschirurgischer Patienten
AUTHOR: Junger A (Reprint); Benson M; Klasen J; Sciuk G; Fuchs C; Sticher J ; Hempelmann G
AUTHOR ADDRESS: Abteilung Anaesthesiologie und Operative Intensivmedizin, Justus-Liebig-Universitaet Giessen, Rudolf-Buchheim Strasse 7, 35392, Giessen, Germany**Germany
JOURNAL: Anaesthesist 49 (10): p875-880 Oktober, 2000 2000
MEDIUM: print
ISSN: 0003-2417
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: German

ABSTRACT: In order to plan the daily routine of a surgical day care unit optimally and effectively, it is indispensable to know the causes of unanticipated admission of outpatients. The purpose of this experiment was to evaluate the influences and predictors of unanticipated admission of patients in our day care unit for ambulatory surgery. The data sets of 3152 surgical out-patients were evaluated. The duration of stay had been entered online by computers. Method. From January 1997 until June 1999, all clinically relevant parameters from any out-patient were entered into an anaesthesia information management system (NarkoData(R), Imeso GmbH, Huettenberg-Rechtenbach, Germany). The correlation of potential nominal and ordinal scaled predictors of unanticipated admission was tested using the chi-squared test. Univariate analysis was used in determining predictors for the occurrence of unanticipated admission. Pearson's contingency coefficient (CC) was used as a standard for the correlation rigidity in nominal and ordinal scaled parameters. The correlation standard eta was used for metrical parameters. Results. Unanticipated admission occurred in 169 (5.4%) of the 3152 outpatients. The following parameters significantly influenced unanticipated admission:age, ASA status, diagnosis (ICD-9), time of admission, different anesthesia procedures and anesthetics (opioids and non-depolarizing muscle relaxants), surgical department, type of surgery (ICPM), duration of operation, blood loss, intraoperative %%%hemoglobin%%% values, and the administration of colloid and %%%crystalloid%%% solutions. The parameters blood loss, intraoperative %%%hemoglobin%%% values, and administration of colloid solutions were evaluated as being good predictors. Conclusion. The causes of unanticipated admission of patients in our day care unit for ambulatory surgery are manifold. Some relate to the patient, the anesthesia, and the organization of the day care unit, whereas lengthy operative trauma leading to intraoperative blood loss also plays a major role.

1/7/34

15757478 BIOSIS NO.: 200000475791
Resuscitation of severe chest trauma with four different %%%hemoglobin%%% -based oxygen-carrying solutions
AUTHOR: Maxwell Robert A; Gibson Jeffrey B; Fabian Timothy C; Proctor Kenneth G (Reprint)
AUTHOR ADDRESS: Department of Physiology, University of Tennessee Health Science Center, Memphis, TN, 38163, USA**USA
JOURNAL: Journal of Trauma Injury Infection and Critical Care 49 (2): p 200-211 August, 2000 2000
MEDIUM: print
ISSN: 1079-6061
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: The purpose of this study was to test whether polynitroxylation (PN) improved the therapeutic profile of %%%hemoglobin%%%-based oxygen-carrying compounds (HBOCs) that were unpolymerized (alphaalphaHb) or 70% polymerized (polyHb) in a clinically relevant model that combines pulmonary injury and reperfusion. To our knowledge, four different HBOC formulations have never been compared in the same trauma model. Methods: Anesthetized, ventilated swine (n = 45) received a unilateral lung contusion + 25% hemorrhage. After 60 minutes, 250 mL of either PNalphaalphaHb (n = 5), alphaalphaHb (n = 10), PNpolyHb (n = 6), polyHb (n = 5), or normal saline (NaCl, n = 10) was administered for 20 minutes, followed by standard %%%crystalloid%%% resuscitation for 30 minutes, and supplemental %%%crystalloid%%% as required for 6 hours to maintain heart rate < 100 beats/min and mean arterial pressure > 70 mm Hg. Results: Nine of 45 deaths occurred before resuscitation. Survival time was 395 minutes with NaCl versus 303 minutes with alphaalphaHb (p = 0.03) or 238 minutes with PNalphaalphaHb (p = 0.04). With both polymerized HBOCs, survival was 480 minutes (polyHb vs. alphaalphaHb, p = 0.005; PNpolyHb vs. PNalphaalphaHb, p = 0.006). All HBOCs were pressors (all p < 0.05) and all reduced the supplemental fluid required to maintain systemic hemodynamics during resuscitation (all p < 0.05). By 90 minutes postresuscitation, cardiac index was 112% of baseline with NaCl (p < 0.02), but was 78% with alphaalphaHb (p = not significant), 63% with PNalphaalphaHb (p < 0.01), 79% with PNpolyHb (p < 0.01), and 67% with polyHb (p < 0.02). Relative to NaCl, no HBOC altered trauma-induced neutrophilia, thrombocytopenia, or the trauma-induced increases in bronchoalveolar lavage protein or bronchoalveolar lavage neutrophils. Conclusion: After resuscitation from chest trauma, we observed the following: (1) all HBOCs reduced fluid requirements and increased right and left ventricular afterload versus NaCl, which further compromised an already marginal cardiac performance; (2) mortality was less with polyHbs relative to alphaalphaHb, but the pressor action was unchanged; (3) the pressor action was less with polynitroxylated compounds relative to the unmodified HBOC, but this chemical modification had no effect on mortality; and (4) the pressor action of HBOCs must be attenuated by strategies other than polymerization or polynitroxylation for these compounds to be safe, effective resuscitants in humans.

15620989 BIOSIS NO.: 200000339302
Postoperative delirium following vascular surgery
AUTHOR: Boehner H (Reprint); Schneider F; Stierstorfer A; Weiss U; Gabriel A; Friedrichs R; Miller C; Grabitz K; Mueller E E; Sandmann W
AUTHOR ADDRESS: Klinik fuer Gefaesschirurgie und Nierentransplantation, Heinrich-Heine-Universitaet, Moorenstrasse 5, 40225, Duesseldorf, Germany **Germany
JOURNAL: Anaesthesist 49 (5): p427-433 Mai, 2000 2000
MEDIUM: print
ISSN: 0003-2417
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RECORD TYPE: Abstract
LANGUAGE: German

ABSTRACT: Introduction: Postoperative delirium is a common psychic disturbance occurring acutely after various surgical procedures and typically presenting with a fluctuating course. These patients' recovery takes longer. In this study we analyze the incidence of postoperative delirium in patients undergoing vascular surgery and try to identify risk factors for its development. Methods: Patients undergoing elective arterial operations were included. Their medical history, the specific vascular diagnosis and operation performed, the medication and laboratory data were monitored. Additionally the patients were preoperatively interviewed by a psychiatrist. Intraoperatively the drugs, infusions, possible transfusions, blood gases and pressures were monitored, as were the times of surgery and anesthesia. Postoperatively patients were seen daily by the psychiatrist and the surgeon for at least 7 days. Postoperative delirium was diagnosed according to DSM IV criteria, and mild, moderate and severe delirium were distinguished. Results: Fifty-four patients entered the study. Twenty-one (38.9%) developed postoperative delirium (11 mild, 2 moderate, 8 severe). Patients with aortic operations developed delirium more frequently than those with non-aortic procedures (55.5 vs 22.2%, n=27 each). Some preexisting diseases (hearing disturbance) increased the probability of postoperative delirium, while age was not identified as a risk factor. General psychopathological and depressive disturbances increased the likelihood of postoperative delirium. Patients who had a severe intraoperative course developed postoperative delirium more frequently. This was not seen in the absolute time of surgery or anesthesia nor in the intraoperative development of blood pressure or intraarterial gases, which did not differ between patients with and without postoperative delirium. More reliable parameters were an increased intraoperative need for %%%crystalloid%%% volume, intra - or postoperatively decreased %%%hemoglobin%%% values (Hb <10 g/dl) and the development of acidosis that had to be treated. Patients with delirium had serious complications more often (8/21=38.1% vs 6/33=18.2%) and needed Intensive Care treatment longer (2.7 vs 2.1 days, only aortic surgery 3.2 vs 2.4 days). Conclusions: Postoperative delirium after vascular surgery is frequent. Patients undergoing aortic surgery, with specific concomittant medical disease, psychopathological disturbances and a severe intraoperative course, are at risk of developing postoperative delirium.

DIALOG(R)File 5:Biosis Previews(R)

15600431 BIOSIS NO.: 200000318744
Two cases of extreme hemodilution caused by massive hemorrhage immediately after start of operation
AUTHOR: Yamaguchi Shigeki (Reprint); Shinohara Masayuki (Reprint); Mishio Mutsuo (Reprint); Okuda Yasuhisa (Reprint); Kitajima Toshimitsu (Reprint)
AUTHOR ADDRESS: First Department of Anesthesiology, Dokkyo University School of Medicine, Tochigi, 321-0293, Japan**Japan
JOURNAL: Japanese Journal of Anesthesiology 49 (4): p391-395 April, 2000 2000
MEDIUM: print
ISSN: 0021-4892
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese

ABSTRACT: We describe two cases of extreme hemodilution due to large amounts of fluid infusion for unexpected massive hemorrhage. In both cases, unexpected hemorrhage with difficult hemostasis occurred within 60 min after the start of the operation. For lack of transfused blood, large amounts of fluid infusion using %%%crystalloid%%% and colloid solutions including 5% albumin, plasma expander and lactated Ringer's solution were administered to maintain circulatory blood volume. The %%%hemoglobin%%% concentration and hematocrit had been below 2.0 g cntdot dl-1 and 10% for approximately one hour, respectively. The extreme hemodilution improved by the urgent blood transfusion. In one case, intraoperative autotransfusion with Cell-Saver(R) was performed. In spite of intraoperative extreme hemodilution, their postoperative courses were uneventful. Intraoperative awareness was present in both cases.

1/7/37
DIALOG(R)File 5:Biosis Previews(R)

15366740 BIOSIS NO.: 200000085053
Effects of hypertonic solutions on blood parameters in sheep
AUTHOR: Bieniek Kazimierz (Reprint); Kondracki Marian; Niemczuk Krzysztof
AUTHOR ADDRESS: Al. Partyzantow 57, 24-100, Pulawy, Poland**Poland
JOURNAL: Medycyna Weterynaryjna 55 (12): p829-832 Dec., 1999 1999
MEDIUM: print
ISSN: 0025-8628
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Polish

ABSTRACT: The effects of %%%crystalloid%%% and colloid hypertonic solution on sodium (Na), chloride (Cl), potassium (K) serum concentrations, osmolality (Osm), total protein content (TP), packed cell volume (PCV), haemoglobin (Hb) and red blood cell count (RBC) were investigated in twelve healthy sheep. Six sheep were given 7.2% NaCl (HSS) and the remaining six sheep 7.2% NaCl in 6% dextran 70 (HSD). The same animals received 0.9% NaCl (NS; n = 6) or 6% dextran 70 in 0.9% NaCl (D; n = 6) after a 4-week interval. Both hypertonic and isotonic solutions were infused at a dose of 4 ml/kg for 2 to 3 minutes through a catheter placed

in the jugular vein, and the sheep were monitored for 240 mins after the start of fluid administration. The infusion of a small volume of isotonic solutions induced a significant decrease in K content only, between 15-60 mins and 45-60 mins in NS and D groups, respectively. The changes in blood parameters after infusion of hypertonic solutions were not significantly different between HSS and HSD groups. In these groups the maximum increase in Na and Cl concentrations and Osm were observed at 5 mins and remained at a significantly higher level until 240 and 210 mins, 60 and 90 mins, and 210 and 240 mins respectively. Long-term increase in Na content and Osm had a favourable effect on the redistribution of extravascular fluids into the vascular compartment. Significant decreases in K, TP, PCV, Hb and RBC parameters were observed at 5 mins after administration of HSS and HSD and clearly indicated the occurrence of hemodilution. In conclusion, these results indicate that rapid infusion of a small volume of hypertonic saline solution or hypertonic saline-dextran solution may be beneficial for initial resuscitation of hypovolemic ruminants.

1/7/38
DIALOG(R)File 5:Biosis Previews(R)

15198724 BIOSIS NO.: 199900458384
Fast-track cardiac anesthesia in patients with sickle cell abnormalities
AUTHOR: Djaiani George N; Cheng Davy C H (Reprint); Carroll Jo A; Yudin Mark; Karski Jacek M
AUTHOR ADDRESS: Department of Anesthesia, Toronto Hospital, 585 University Ave., Bell Wing 4-646, Toronto, ON, M5G 2C4, Canada**Canada
JOURNAL: Anesthesia and Analgesia 89 (3): p598-603 Sept., 1999 1999
MEDIUM: print
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LANGUAGE: English

ABSTRACT: We conducted a retrospective review of 10 patients with sickle cell trait (SCT) and 30 patients (cohort control) without SCT undergoing first-time coronary artery bypass graft surgery with cardiopulmonary bypass. Demographic, perioperative management, and outcome data were collected. Both groups were matched according to age, weight, duration of surgery, and preoperative %%%hemoglobin%%% (Hb) concentration. Distribution of gender, medical conditions, pharmacological treatment, and preoperative left ventricular function were similar between the groups. The comparisons were analyzed in respect to postoperative blood loss and transfusion rates, as well as duration of intubation, intensive care unit, and hospital length of stay (LOS). All patients underwent fast-track cardiac anesthesia. A combination of cold %%%crystalloid%%% and blood cardioplegia was used. The lowest nasopharyngeal temperature was 33degreeC. There were no episodes of significant hypoxemia, hypercarbia, or acidosis. None of the patients had sickling crisis during the perioperative period. The postoperative blood loss was 687 +- 135 vs 585 +- 220 mL in the SCT and control groups, respectively. The trigger for blood transfusion during cardiopulmonary bypass was hematocrit <20% and Hb <75 g/L postoperatively. Three SCT patients (30%) and 10 control patients (33%) received a blood transfusion. Median extubation time was 4.0 vs 3.9 h; intensive care unit LOS was 27 vs 28 h; and hospital LOS

Ordered

was 6.0 vs 5.5 days in the SCT and control groups, respectively. There were no intraoperative deaths. One patient in the SCT group died from multiorgan failure 2 mo after surgery. Implications: Fast-track cardiac anesthesia can be used safely in patients with sickle cell trait undergoing first-time coronary artery bypass graft surgery. Extubation time and intensive care unit and hospital length of stay are comparable to those of matched controls, and blood loss and transfusion requirements are not increased. A hematocrit of 20% seems to be a safe transfusion trigger during cardiopulmonary bypass in these patients.

1/7/39
DIALOG(R)File 5:Biosis Previews(R)

14981150 BIOSIS NO.: 199900240810
Hemodilution as a method to reduce transfusion requirements in adolescent spine fusion surgery
AUTHOR: Copley Lawson A B (Reprint); Richards B Stephens; Safavi Fay Z; Newton Peter O
AUTHOR ADDRESS: Department of Orthopaedic Surgery, 96 Medical Operations Squadron, Eglin Air Force Base, FL, 32542, USA**USA
JOURNAL: Spine 24 (3): p219-224 Feb. 1, 1999 1999
MEDIUM: print
ISSN: 0362-2436
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RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Study Design. A case-control study. Objectives. 1) To determine if hemodilution adequately meets the transfusion needs in children who undergo posterior spinal fusion for idiopathic scoliosis and 2) to compare the efficacy of the various methods used to reduce the risk of allogeneic blood transfusion at the authors' institution. Summary of Background Data. Methods to reduce blood loss and avoid allogeneic blood transfusion caused by extensive spinal surgery in adolescents include 1) autologous blood predonation, 2) controlled hypotensive anesthesia, 3) intraoperative salvage of shed blood (cell saver), 4) acute normovolemic hemodilution, and 5) transfusion decisions by clinical judgment rather than by a preset value of %%%hemoglobin%%%. Although all methods have some efficacy, it is not clear which methods, separate or combined, are best in the adolescent scoliosis population. Methods. Hemodilution, hypotensive anesthesia, and cell saver were used in 43 children between June 1996 and July 1997. A comparison group (43 children) underwent similar surgery with hypotensive anesthesia and cell saver, but no hemodilution (between July 1995 and December 1996). These two groups were similar with respect to means of age, levels of instrumentation, magnitude of curvature, estimated blood volume, mean arterial pressure, duration of surgery, duration of anesthesia, estimated blood loss, volume returned from cell saver, volume in the hemovac drain, and length of hospitalization. The groups differed in preoperative %%%hemoglobin%%% and hematocrit and in volume of %%%crystalloid%%% used. Results. Transfusions were given to 34 of 43 patients (79%) in the nonhemodilution group. These patients received 61 units of packed cells (57 autologous, 2 donor directed, and 2 allogeneic). In comparison, 16 of 43 patients (37%) in the hemodilution group required transfusion. They received 16 units of packed cells (15 autologous and 1 allogeneic). There was no significant

difference between the groups with respect to postoperative %%%hemoglobin%%% and hematocrit immediately after surgery (hemodilution, 10.2/29.2; nonhemodilution, 10.0/29.1), postoperative day 1 (hemodilution, 9.2/26.9; nonhemodilution, 9.2/27.3), and postoperative day 2 (hemodilution 9.0/26.4; nonhemodilution, 9.2/27.1). There were no complications related to the technique of hemodilution in the 43 patients of this group. Cell saver was used in all patients, but sufficient volume to return blood to the patient was available in only 23 hemodilution patients (mean volume, 230 mL) and 25 nonhemodilution patients (mean volume, 215 mL). In only two patients of each group (< 5%) did the volume returned prevent the absolute need for additional transfusions. Conclusions. Hemodilution was safely used as a method to satisfy the perioperative transfusion requirements of adolescents undergoing extensive spinal surgery. By allowing patients to arrive at surgery with a higher preoperative %%%hemoglobin%%% and hematocrit, and by decreasing the quantity of predonated autologous blood-collected and therefore used, the hemodilution method may indirectly decrease the quantity of postoperative autologous transfusions in this population. Cell saver was not shown to be effective, and its selective use is recommended.

1/7/40
DIALOG(R)File 5:Biosis Previews(R)

14971742 BIOSIS NO.: 199900231402
Stability of the interstitial matrix after %%%crystalloid%%% fluid loading studied by volume kinetic analysis
AUTHOR: Svensen C (Reprint); Drobin D (Reprint); Olsson J; Hahn R G (Reprint)
AUTHOR ADDRESS: Department of Anaesthesia, Sodersjukhuset, S-118 83, Stockholm, Sweden**Sweden
JOURNAL: British Journal of Anaesthesia 82 (4): p496-502 April, 1999 1999
MEDIUM: print
ISSN: 0007-0912
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: To investigate if fluid therapy changes the prerequisites for the development of oedema, four i.v infusions of Ringer's solution 25 ml kg-1 were given over 15 or 30 min in a randomized crossover study to 10 healthy male volunteers, aged 28-40 (mean 31) yr. Blood haemoglobin concentration, measured every 5 min for 90 min, and urinary excretion were used as input data for volume kinetic analysis. The results showed that the elimination rate constant (kr) was higher when another infusion had been given earlier on the same day (208 vs 140 ml min-1; P<0.002) and the size of V1 was larger during the 15-min infusions (4.7 vs 3.2 litre; P<0.02). However, the size of V2 and the rate constant for the exchange of fluid between V1 and V2 were similar during all infusions. We conclude that a fluid challenge makes elimination of further infused fluid more effective but does not change compliance with volume expansion in healthy volunteers.

1/7/41
DIALOG(R)File 5:Biosis Previews(R)

14711674 BIOSIS NO.: 199800505921
Effect of administration rHuEpo associated with acute normovolaemic haemodilution on transfusion needs during surgery for total hip replacement
AUTHOR: Beris P (Reprint); Samii K; De Pree C; Matthes T; Gamulin Z; Hoffmeyer P
AUTHOR ADDRESS: Div. d'Hematol., Hop. Cantonal Univ. Geneve, CH-1211 Geneve 14, France**France
JOURNAL: Schweizerische Medizinische Wochenschrift 128 (42): p1582-1586 Oct. 17, 1998 1998
MEDIUM: print
ISSN: 0036-7672
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: French

ABSTRACT: Acute normovolaemic haemodilution (ANH) is used to avoid perioperative blood loss and consists of the withdrawal of whole blood just before or just after anaesthesia induction and its simultaneous replacement by synthetic colloids and %%%crystalloid%%% solutions. In an attempt to improve the efficiency of this technique while at the same time avoiding cardiovascular complications, we set up a pilot study to test the association of rHuEpo/ANH during elective surgery for total hip replacement. Five patients (3 mates, 2 females) were included in this study. The amount of whole blood drawn was 3 X 450 ml from the men and 2 X 450 ml from the women. Before blood was taken, the mean increase in haemoglobin was 1.2 +- 0.9 g/dl and mean increase in reticulocytes 106 +- 34 G/l. No patient received homologous transfusion during the perioperative period; 3 patients received the totality of predonated blood and one patient 2 of the 3 units taken. The mean fall in haemoglobin at day 1 post-surgery was 3.6 g/dl. In conclusion, the stimulation of erythropoiesis by rHuEpo in the pre-surgery phase led on average to a 1 g/dl gain in haemoglobin, permitting an isovolaemic withdrawal of 900 to 1350 ml of blood depending on body weight without the development of severe anaemia. It was thus possible to perform total hip replacement in all the patients without homologous blood support and with a post-surgery haemoglobin value of >10 g/dl. This protocol should be further tested in a prospective randomised study (rHuEpo versus placebo) in order to assess the real benefit of rHuEpo.

1/7/42
DIALOG(R)File 5:Biosis Previews(R)

14322274 BIOSIS NO.: 199800116521
The effects of red-cell scavenging, hemodilution, and active warming on allogenic blood requirements in patients undergoing hip or knee arthroplasty
AUTHOR: Schmied Harald (Reprint); Schiferer Arno; Sessler Daniel I; Meznik Christian
AUTHOR ADDRESS: Krankenhausstrasse 21, A-3300 Amstetten, Austria**Austria
JOURNAL: Anesthesia and Analgesia 86 (2): p387-391 Feb., 1998 1998
MEDIUM: print
ISSN: 0003-2999

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ordered

ABSTRACT: Since 1993, we have progressively adopted three techniques to reduce transfusion requirements during major orthopedic surgery: red-cell scavenging, acute normovolemic hemodilution, and active patient warming. We retrospectively evaluated all 821 elective hip and knee arthroplasties performed in our institution beginning with July 1993. Target minimal hematocrits were guided by patient ages and cardiovascular status. The first approximately 500-mL blood loss was replaced with %%%crystalloid%%% at a ratio of 3 mL for each milliliter of blood loss. Additional blood loss was replaced with colloid, hemodilution blood (when available), and scavenged red cells (when available). Allogenic transfusions were then administered as necessary to maintain target hematocrits, which were prospectively defined based on the patient ages and cardiovascular health. Univariate analysis was applied initially. Significant predictors of transfusion requirement were subsequently entered into a stepwise multiple regression to account for confounding factors, including age, type of anesthesia (regional versus general) and type of surgery (primary versus hardware replacement). Postoperative %%%hemoglobin%%% concentrations were similar over the years of study and among the patients given each treatment. During the study period, allogenic blood requirements decreased from 1.3 +- 1.7 U/patient to 0.6 +- 1.4 U/patient (mean +- SD). Both univariate and regression analyses indicated that each treatment significantly reduced transfusion requirements ($P < 0.05$). We conclude that red-cell scavenging, hemodilution, and active cutaneous warming each reduce allogenic blood requirements during hip and knee arthroplasties. Implications: We retrospectively evaluated three strategies to reduce overall blood loss: red-cell scavenging, acute normovolemic hemodilution, and active patient warming. During the study period, allogenic blood requirements decreased by a factor of 2. Each treatment contributed to this reduction. We therefore conclude that each treatment reduces allogenic blood requirements during hip and knee arthroplasties.

1/7/43

14248789 BIOSIS NO.: 199800043036
Isolyte S, a physiologic multielectrolyte solution, is preferable to normal saline to wash cell saver salvaged blood: Conclusions from a prospective, randomized study in a canine model
AUTHOR: Halpern Neil A (Reprint); Alicea Margarita; Seabrook Bruce; Spungen Ann; Greenstein Robert
AUTHOR ADDRESS: VA Med. Cent., 130 W. Kingsbridge Rd., Bronx, NY 10468, USA **USA
JOURNAL: Critical Care Medicine 25 (12): p2031-2038 Dec., 1997 1997
MEDIUM: print
ISSN: 0090-3493
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objectives: The purpose of this study is to compare normal saline

with Isolyte S as the wash solutions during high-volume cell saver autologous blood transfusion. Normal saline, the standard wash solution in cell saver autologous blood transfusion, is associated with acid-base and electrolyte derangements. Isolyte S is a physiologic, balanced multielectrolyte %%%crystalloid%%% solution that approximates the electrolyte content of plasma. Design: Open-label, prospective, randomized study. Setting: Research laboratory in a Department of Veterans Affairs medical center. Subjects: Fourteen mongrel dogs, weighing 22 to 23 kg each. Interventions: Fourteen mongrel dogs were prospectively randomized to receive normal saline (n = 7) or Isolyte S (n = 7). Animals were anesthetized, received heparin for anticoagulation, and underwent 18 cycles of cell saver autotransfusion. In each cycle, 125 mL of blood was arterially withdrawn, and washed with either normal saline (mEq/L) (sodium 154, chloride 154) or Isolyte S (mEq/L) (sodium 141, potassium 5, magnesium 3, chloride 98, phosphate 1, acetate 28, and gluconate 23). The washed blood was retransfused. Measurements and Main Results: Acid-base and electrolyte analyses were performed throughout the study on the systemic blood of each group and compared. By the end of the study, the Isolyte S group had a normal pH and an increased bicarbonate concentration (mEq/L: normal values 24 to 32; normal saline 9.0 +- 1.9 vs. Isolyte S 13.2 +- 3.0 (p <.01)) and an increased magnesium concentration (mg/dL: normal values 1.6 to 2.4; normal saline 1.6 +- 0.2 vs. Isolyte S 2.2 +- 0.2 (p <.0001)). Additionally, the Isolyte S group had a lower chloride concentration (mEq/L: normal values 95 to 110; normal saline 130 +- 9 vs. Isolyte S 117 +- 7 (p <.02)) and a lower potassium concentration (mEq/L: normal values 3.5 to 5.0; normal saline 4.4 +- 0.5 vs. Isolyte S 3.7 +- 0.3 (p <.01)). There were no significant differences between normal saline or Isolyte S in the values of PCO2, lactic acid, sodium, total and ionized calcium, inorganic phosphorus, total protein, albumin, %%%hemoglobin%%%, and hematocrit. Conclusions: Fewer systemic acid-base and electrolyte derangements were observed when blood was washed with Isolyte S. Differences between the normal saline and Isolyte S groups are ascribed primarily to the constituents of the wash solution. We conclude that Isolyte S, a physiologic, balanced, multielectrolyte solution, should be considered as the wash solution in high-volume autologous cell saver blood processing and transfusion.

1/7/44
DIALOG(R)File 5:Biosis Previews(R)

14207683 BIOSIS NO.: 199800001930
Myocardial oxygen tension in isolated erythrocyte-perfused rat hearts and comparison with %%%crystalloid%%% media
AUTHOR: Friedman Bruce J (Reprint); Grinberg Oleg Y; Grinberg Stalina A; Swartz Harold M
AUTHOR ADDRESS: Section Cardiol., Dartmouth-Hitchock Med. Cent., One Medical Center Dr., Lebanon, NH 03756, USA**USA
JOURNAL: Journal of Molecular and Cellular Cardiology 29 (10): p2855-2858 Oct., 1997 1997
MEDIUM: print
ISSN: 0022-2828
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The isolated heart, typically perfused with %%%crystalloid%%% media equilibrated with gtoreq95% O2 to ensure adequate myocardial oxygen tension, is commonly used to study cardiac function. When %%%hemoglobin%%% is available for oxygen transport, equilibration with 21% O2 is considered adequate to meet metabolic demands. This study presents the measurement of myocardial pO2 in isolated hearts perfused with an erythrocyte suspension. Baseline myocardial pO2 in erythrocyte-perfused hearts was 16.4 +- 3.5 mmHg (mean +- S.E.). When compared to previous measurements of myocardial pO2 in isolated hearts perfused with %%%crystalloid%%% media, the use of erythrocyte suspensions resulted in a 10-fold lower level of myocardial pO2, while avoiding very low and high values. The standard use of 95% oxygen with %%%crystalloid%%% results in myocardial levels of oxygen far above those usually found in the presence of %%%hemoglobin%%% and room air.

1/7/45
DIALOG(R)File 5:Biosis Previews(R)

13965242 BIOSIS NO.: 199799599302
Enhancement of brain pO-2 during cardiopulmonary bypass using a hyperosmolar oxygen carrying solution
AUTHOR: Runge T M (Reprint); McGinity J W; Frisbee S E; Briceno J C (Reprint); Ottmers S E (Reprint); Calhoon J H; Hantler C B; Korvick D L; Ybarra J R
AUTHOR ADDRESS: Biomed. Engineering Program, Univ. Texas at Austin, Austin, TX 78712, USA**USA
JOURNAL: Artificial Cells Blood Substitutes and Immobilization Biotechnology 25 (3): p297-308 1997 1997
ISSN: 1073-1199
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ordered

ABSTRACT: During the past decade a new syndrome has been recognized: cerebral hypoxia secondary to cardiopulmonary bypass, resulting in impairment of cognitive memory. The incidence of the syndrome appears to be no less that 30% in patients over 65 years of age undergoing cardiac surgery. There are several factors contributing to hypoxia produced by cardiopulmonary bypass. One of these factors is %%%crystalloid%%% pump prime and replacement solutions devoid of (1) oxygen carrying capacity and (2) devoid of protein and its colloid osmotic pressure. This shortcoming of cardiopulmonary %%%crystalloid%%% solutions is partially responsible for two of the three major pathologic effects of cardiopulmonary bypass. (1) hypoxia (2) interstitial fluid accumulation (anasarca, water-logging, edema). This report describes an oxygen carrying hyperosmolar solution which enhances brain pO-2, and diminishes interstitial fluid accumulation. This blood substitute consists of perfluorcarbons and saccharides, but could consist of a %%%hemoglobin%%% variant plus hyperosmolar ingredients other than saccharides. The advantage of a perfluorochemical is its ability to access small channels and to be centrifuged off the patient post-operatively with a cell saver. The advantage of saccharides is that they can be metabolized by the patient for energy, and they produce a moderate diuresis coming off bypass.

1/7/46
DIALOG(R)File 5:Biosis Previews(R)

13827096 BIOSIS NO.: 199799461156
Volume kinetics of Ringer's solution in female volunteers
AUTHOR: Hahn R G (Reprint); Drobin D; Stahle L
AUTHOR ADDRESS: Dep. Anaesthesia, Soder Hosp., S-118 83 Stockholm, Sweden** Sweden
JOURNAL: British Journal of Anaesthesia 78 (2): p144-148 1997 1997
ISSN: 0007-0912
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The kinetics of %%%crystalloid%%% solutions in humans have not been adequately described previously. Therefore, we measured blood haemoglobin concentration during and for 120 min after i.v. infusion of 25 ml kg-1 of Ringer's acetate solution over 15, 30, 45 and 80 min, and 12.5 ml kg-1 over 30 min in six adult female volunteers. The dilution-time profiles were analyzed according to a new kinetic model adapted for fluid spaces. Volume expansion produced by Ringer's solution approached steady state in an exponentially decaying manner when plasma volume had increased by approximating 550 ml. The size of the fluid space expanded by Ringer's solution was only 4.8 litre (95% confidence interval 3.8-5.8 litre) except for the fastest infusion, where it averaged 9.0 litre. The rate of fluid elimination could be predicted as the product of plasma dilution and a constant averaging 95 (95% confidence interval 68-122) ml min-1.

1/7/47
DIALOG(R)File 5:Biosis Previews(R)

13827095 BIOSIS NO.: 199799461155
Modelling the volume of expandable body fluid spaces during i.v. fluid therapy
AUTHOR: Stahle L; Nilsson A; Hahn R G (Reprint)
AUTHOR ADDRESS: Dep. Anaesthesia, Soder Hosp., S-118 83 Stockholm, Sweden** Sweden
JOURNAL: British Journal of Anaesthesia 78 (2): p138-143 1997 1997
ISSN: 0007-0912
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have developed mathematical models to represent the changes in volume of fluid spaces associated with i.v. administration of a %%%crystalloid%%% solution. Input data for parameter estimations were dilution of blood, measured as reduction of blood haemoglobin concentration. The models were based on the assumption that the body strives to maintain volume homeostasis of fluid spaces and that the rate of restoration is a function of deviation from resting volume. Two models were derived; the first had a single fluid space into which fluid was administered and from which fluid left, the other model had a second

fluid space communicating with the first. These models may be useful in the description and analysis of the effects of i.v. fluid therapy.

1/7/48
DIALOG(R)File 5:Biosis Previews(R)

13771795 BIOSIS NO.: 199799405855
Cellular responses to surgical trauma, hemorrhage, and resuscitation with diaspirin cross-linked %%%hemoglobin%%% in rats
AUTHOR: Xu Lan; Sun Liying; Rollwagen Florence M; Li Yingyue; Pacheco Nancy D; Pikoulis Emmanouil; Leppanemi Ari; Soltero Raluan; Burris David; Malcom Diana; Nielsen Thor B (Reprint)
AUTHOR ADDRESS: Resuscitative Med. Program, Naval Med. Res. Inst., 8901 Wisconsin Ave., Bethesda, MD 20889-5607, USA**USA
JOURNAL: Journal of Trauma 42 (1): p32-41 1997 1997
ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Resuscitation with acellular oxygen carrier solutions offers the potential advantage of improved oxygen delivery compared with %%%crystalloid%%% solutions, but the detailed consequences of improved resuscitation have not been fully evaluated. This study evaluated local and systemic cellular effects of trauma, hemorrhage, and resuscitation in a model of hemorrhage and surgical trauma. Methods: Rats with a 10 cm full-thickness incisional wound and a 15 mL/kg hemorrhage were either not resuscitated or resuscitated with blood or diaspirin cross-linked %%%hemoglobin%%% (DCLHb). Cellular proliferative responses were evaluated at 1.5, 6, 24, and 48 hours after wounding by labeling in vivo with 5-bromo-2'-deoxyuridine. Plasma levels of interleukin-6, tumor necrosis factor-a, and interferon-gamma were measured by bioassay or enzyme-linked immunosorbent assay (ELISA). Bacterial translocation was measured by culturing liver homogenates. Results: Trauma inhibited keratinocyte and hepatocyte proliferation at 1.5 and 6 hours; and stimulated subsequent proliferation of keratinocytes and liver nonparenchymal cells. DCLHb stimulated wound keratinocyte proliferation, attenuated the inhibition of hepatocyte proliferation, eliminated bacterial translocation to the liver, protected the intestine from ischemic damage, and induced a rapid increase of interleukin-6 during the early phase of injury. Conclusions: Surgical trauma alone, or in combination with hemorrhage, modulated cell proliferation both in the wound and in the remote organs of intestine and liver. DCLHb enhanced wound healing and cell proliferation as well as, or better than, freshly drawn blood, which may be beneficial for trauma care.

1/7/49
DIALOG(R)File 5:Biosis Previews(R)

13542608 BIOSIS NO.: 199699176668
Rationale for increasing the margin of safety with oxygen-carrying drugs during acute normovolaemic haemodilution
AUTHOR: Zuck T F (Reprint); Keipert P E; Faithfull N S; Flaim S F; Flaim K

E; Riess J G
AUTHOR ADDRESS: Hoxworth Blood Cent., Univ. Cincinnati Med. Cent., Cincinnati, OH, USA**USA
JOURNAL: Transfusion (Bethesda) 36 (7): p661 1996 1996
CONFERENCE/MEETING: Consensus Conference on Autologous Transfusion Edinburgh, Scotland, UK October 4-5, 1995; 19951004
ISSN: 0041-1132
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

1/7/50
DIALOG(R)File 5:Biosis Previews(R)

13416949 BIOSIS NO.: 199699051009
Mitral valve reconstruction in sickle cell disease
AUTHOR: Pagani Francis D; Polito Rocco J; Bolling Steven F (Reprint)
AUTHOR ADDRESS: Sect. Thoracic Surg., Univ. Michigan Hosp., Taubman Health Care Cent., 2120, Box 0344, Ann Arbor, MI 48109, USA**USA
JOURNAL: Annals of Thoracic Surgery 61 (6): p1841-1843 1996 1996
ISSN: 0003-4975
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: As survival improves in patients with sickle cell anemia, the prospects of performing cardiac surgical procedures on older patients with this genetic defect increase. We describe the successful management of a 52-year-old patient with sickle cell disease (homozygous for %%%hemoglobin%%% S) and a history of multiple sickle crisis undergoing cardiopulmonary bypass for mitral valve repair. Preoperative partial exchange transfusion followed by total exchange transfusion at the time of operation was performed to reduce the level of %%%hemoglobin%%% S to 5.4% during bypass. Other management strategies included high-flow normothermic bypass with aortic crossclamping, topical hypothermia, and cold %%%crystalloid%%% cardioplegia.

1/7/51
DIALOG(R)File 5:Biosis Previews(R)

13304323 BIOSIS NO.: 199698772156
Clinical evaluation of hemodilutional autotransfusion using %%%crystalloid%%% solution in open heart surgery
AUTHOR: Ishiguro Toshihiko (Reprint); Gyouda Yasuaki; Sano Hiromi; Yamauchi Akihiro; Seki Makoto; Yokota Miyuki; Tsukada Yuuichi; Uchiyama Masanori
AUTHOR ADDRESS: Dep. Anesthesiol., Saitama National Hosp., Saitama, Japan** Japan
JOURNAL: Nichidai Igaku Zasshi 55 (1): p32-38 1996 1996
ISSN: 0029-0424
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese

ABSTRACT: We evaluated hemodilutional autotransfusion (HAT) using %%%crystalloid%%% solution in 20 scheduled open-heart surgeries. The patients were graded as ASA I to III. Hemodilution was performed by administering lactated Ringer's solution alone; then 800 g of self blood was harvested. During this procedure the patient's hemodynamics remained in a good condition. No expect adverse effects of HAT, such as an increase in blood loss or the prolongation of the post-operative artificial ventilation period, were recognized. The patients progressed satisfactorily after the operation. HAT cases showed a significantly low percent decrease in %%%hemoglobin%%% concentrations in comparison with 10 non-HAT cases. We concluded that HAT with %%%crystalloid%%% solution can be safely performed in cardiac surgery and will greatly contribute to reducing allogenic blood transfusion.

1/7/52
DIALOG(R)File 5:Biosis Previews(R)

13256917 BIOSIS NO.: 199698724750
Diaspirin cross-linked %%%hemoglobin%%% is efficacious in gut resuscitation as measured by a GI tract optode
AUTHOR: Frankel Heidi L (Reprint); Nguyen Huy B; Shea-Donohue Terez; Aiton Laurie A; Ratigan Jennifer; Malcolm Diana S
AUTHOR ADDRESS: Brandywine Hosp., Route 30 Bypass, Coatesville, PA 19320, USA**USA
JOURNAL: Journal of Trauma 40 (2): p231-241 1996 1996
ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The objective of this study was to compare the efficacy of diaspirin cross-linked %%%hemoglobin%%% (DCLHb) with that of standard resuscitative fluids in restoring intestinal mucosal oxygenation and villous architecture after hemorrhage. Male rats were bled to a base deficit of 5+/-2 nmol/l under propofol anesthesia and monitored for 90 minutes postresuscitation with DCLHb, blood, lactated Ringer's solution, albumin, or nothing (DNR) for mucosal oxygen tension (Pmo-2) and physiologic and laboratory parameters. Small intestinal histologic specimens were obtained and scored independently by two investigators blinded to therapy on a scale of 0 (normal) to 4 (worst). All treatments restored Pmo-2; only DCLHb did so without exceeding baseline values. For untreated rats (DNR), Pmo-2 was not restored. Normal mucosal architecture was maintained only in DCLHb-treated rats. As Pmo-2 increased, mucosal score improved. In a rat model of controlled hemorrhage, Pmo-2 changes measured by an optode correlated with gut histological abnormalities. By these criteria, DCLHb is superior to %%%crystalloid%%%, colloid, and blood in gut resuscitation.

1/7/53
DIALOG(R)File 5:Biosis Previews(R)

12699917 BIOSIS NO.: 199598167750
Resuscitation with diaspirin crosslinked %%%hemoglobin%%% in a pig model of

hemorrhagic shock
AUTHOR: Dunlap E; Farrell L; Nigro C; Estep T; Marchand G; Burhop K
AUTHOR ADDRESS: Safety and Efficacy Assessment Cent., Applied Sci., Baxter Healthcare Corp., Round Lake, IL 60073, USA**USA
JOURNAL: Artificial Cells Blood Substitutes and Immobilization Biotechnology 23 (1): p39-61 1995 1995
ISSN: 1073-1199
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The efficacy of Diaspirin Crosslinked %%%Hemoglobin%%% (DCLHb) as a resuscitative fluid in hemorrhagic shock was compared to another colloid solution (human serum albumin, HSA) and a %%%crystalloid%%% solution (Lactated Ringer's, LR). Hemorrhage (35 mL/kg) was followed by isovolemic exchange then volume replacement. This modeled the clinical situation where resuscitative fluids are administered prior to stopping the hemorrhage, the hemorrhage is stopped, then blood volume is restored. Four combinations of resuscitative fluids were evaluated during isovolemic exchange: volume replacement DCLHb:LR, HSA:LR, HSA:HSA and LR:LR. All doses were 10 mL/kg:35 mL/kg except LR:LR which was 10 mL/kg: 125 mL/kg. Volume replacement was followed by a stabilization period and reinfusion of shed blood (35 mL/kg). MAP increased most rapidly using DCLHb (from 48 to 102 mmHg after 10 min. of isovolemic exchange) and was maintained for at least 2 hours. Arterial oxygen content and acid-base status were significantly improved after resuscitation with DCLHb:LR vs. other resuscitative therapies. In conclusion, DCLHb:LR was an effective resuscitative therapy in treatment of hemorrhagic shock.

1/7/54
DIALOG(R)File 5:Biosis Previews(R)

12658608 BIOSIS NO.: 199598126441
Colloid infusion after brain injury: Effect on intracranial pressure, cerebral blood flow, and oxygen delivery
AUTHOR: Zhuang Jing; Shackford Steven R; Schmoker Joseph D; Pietropaoli John A Jr
AUTHOR ADDRESS: Dep. Surgery, College Med., Univ. Vermont, Burlington, VT, USA**USA
JOURNAL: Critical Care Medicine 23 (1): p140-148 1995 1995
ISSN: 0090-3493
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objectives: We sought to determine the effects of colloid osmotic pressure on cerebral edema formation after brain injury. We hypothesized that an increase in plasma oncotic pressure accompanying a colloid infusion would be associated with a decrease in intracranial pressure and increases in cerebral blood flow and oxygen delivery when compared with isotonic %%%crystalloid%%%. Design: Prospective, laboratory study. Setting: University surgical research laboratory. Subjects: Adult swine, both genders. Interventions: Cryogenic brain injury with intravenous fluid infusion of either lactated Ringer's solution or 6% dextran-70 in normal saline. The effect of this intervention was monitored for 24 hrs.

Measurements: Mean arterial pressure, central venous pressure, intracranial pressure, %%%hemoglobin%%% concentration, plasma oncotic pressure, serum osmolality, cerebral blood flow, and specific gravity of cortical biopsies. Results: Cryogenic injury significantly increased the cortical water content and the intracranial pressure and significantly decreased the cerebral blood flow and oxygen delivery (p lt .05). Dextran infusion significantly increased the colloid oncotic pressure. There were no differences between the lactated Ringer's solution and dextran groups in intracranial pressure, cerebral oxygen delivery, or cortical water content after 24 hrs. Conclusions: Colloid infusion after a focal cryogenic injury does not increase cerebral oxygen delivery or reduce either cerebral edema formation or intracranial pressure when compared with lactated Ringer's solution. Colloid is not superior to isotonic %%%crystalloid%%% in the management of isolated brain injury.

1/7/55
DIALOG(R)File 5:Biosis Previews(R)

12605935 BIOSIS NO.: 199598073768
Evaluation of massive volume replacement in the penetrating trauma patient
AUTHOR: Mitchell Kevin J (Reprint); Moncure Kimberly E; Onyeije Chukwuma; Rao M S; Siram S
AUTHOR ADDRESS: 11155 Dunn Rd., Ste. 102N, St. Louis, MO 63136, USA**USA
JOURNAL: Journal of the National Medical Association 86 (12): p926-929 1994 1994
ISSN: 0027-9684
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The records of 163 penetrating trauma patients who required surgery in a 36-month period between 1988 and 1990 are reviewed. Those patients with head trauma were excluded. Thirty patients were identified as having: similar Injury Severity Scores (ISS), received at least 8 L of %%%crystalloid%%%, and received at least 4 units of packed red blood cells during the first 24 hours after admission. There were 22 (73%) survivors and 8 (27%) nonsurvivors. Charts were reviewed for a variety of variables to determine which characteristics distinguished nonsurvivors from survivors. The mean ISS was 30.5 +- 5.5. As a group, nonsurvivors received more blood transfusions (14.9 +- 4.9 versus 5.0 +- 1.14), had longer durations of shock (55.6 +- 18 minutes versus 19.3 +- 11.7 minutes), and had lower core body temperatures (92.6 degree F +- 2.2 versus 95.1 degree F +- 2.4) than survivors. Nonsurvivors also had lower %%%hemoglobin%%% levels (7.84 +- 1 versus 9.1 +- 2.3) and platelet counts (134.2 +- 14.1 versus 188.6 +- 6.3) than survivors. In addition, nonsurvivors demonstrated greater incidence of three major risk factors than did the survivors: hypothermia (75% versus 41%), acidosis (100% versus 27%), and coagulopathy (62% versus 4.5%). Therapeutic measures to limit these risk factors for increased mortality may maximize the chance of survival in these patients.

1/7/56
DIALOG(R)File 5:Biosis Previews(R)

12519365 BIOSIS NO.: 199497540650
%%%Crystalloid%%% infusion increases plasma hyaluronan
AUTHOR: Berg Soren (Reprint); Engman Anette; Hesselvik J Fredrik; Laurent Torvard C
AUTHOR ADDRESS: Dep. Anesthesiol., Univ. Hosp., 581 85 Linkoping, Sweden** Sweden
JOURNAL: Critical Care Medicine 22 (10): p1563-1567 1994 1994
ISSN: 0090-3493
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: To investigate the changes in plasma hyaluronan concentrations after intravenous infusion of %%%crystalloid%%% solution in healthy subjects. Design: Crossover, controlled study. Setting. General intensive care unit in a university hospital. Subjects: Twelve healthy medical students. Interventions: Infusion of 1000 mL iv Ringer's acetate solution during a 40-min period. Measurements and Main Results: Plasma hyaluronan concentrations were measured before, during, and after infusion, and under the same conditions without the infusion in a separate session. %%%Hemoglobin%%%, hematocrit, and serum albumin concentrations were measured before and after infusion. Plasma volume at baseline and the volume of Ringer's acetate retained in the intravascular space after infusion were calculated. Plasma hyaluronan values increased from baseline mean of 12 +- 5.8 (SD) to 20 +- 13.1 mu-g/L (p lt .01) at 30 mins and 25 +- 13.0 mu-g/L (p lt .001) at 40 mins after start of the infusion. Plasma hyaluronan concentrations peaked at 10 mins after the end of the infusion: 27 +- 13.9 mu-g/L (p lt .001). No changes in plasma hyaluronan concentrations were seen during the control period. A volume of 230 to 250 mL of Ringer's acetate solution was calculated to be retained within the intravascular space. Conclusions: Infusion of %%%crystalloid%%% solution increases plasma hyaluronan, probably through a washout of interstitial hyaluronan by way of increased lymph flow. The consequences of the interstitial loss of hyaluronan on tissue function are unknown.

1/7/57
DIALOG(R)File 5:Biosis Previews(R)

12423710 BIOSIS NO.: 199497444995
Increased vascular resistance with %%%hemoglobin%%%-based oxygen carriers
AUTHOR: Hess J R; MacDonald V W; Gomez C S; Coppes V
AUTHOR ADDRESS: Div. Blood Res., Letterman Army Inst. Res., Presidio San Francisco, CA 94129-6800, USA**USA
JOURNAL: Artificial Cells Blood Substitutes and Immobilization Biotechnology 22 (3): p361-372 1994 1994
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Purpose: To compare the effects of resuscitation with %%%hemoglobin%%%-based oxygen-carriers and conventional resuscitation fluids on hemodynamics, oxygen transport, and oxygen consumption in an animal model of the use of these fluids in the treatment of hemorrhagic

shock. Protocol: Twenty-eight immature swine were surgically prepared, allowed to recover five days, water deprived for 48 hours, hemorrhaged of 25 ml/kg over one hour, resuscitated promptly with 1) Ringer's lactate, 75 ml/kg, 2) 7% albumin in Ringer's acetate, 25 ml/kg, 3) 9% unmodified %%%hemoglobin%%% in Ringer's acetate, 25 ml/kg, or 4) 9% alpha-alpha-crosslinked %%%hemoglobin%%% in Ringer's acetate, 25 ml/kg, and observed with three hours of hemodynamic and oxygen transport measurements. Results: Systemic and pulmonary vascular resistance were increased in %%%hemoglobin%%%-treated animals to more than twice the levels seen in %%%crystalloid%%%- or colloid-treated controls. Oxygen consumption and the rate of correction of lactic acidosis were not increased in %%%hemoglobin%%%-treated animals. Conclusions: Increased vascular resistance limits the oxygen transport benefit of cell-free-%%%hemoglobin%%%-based oxygen carriers. Cell-free-%%%hemoglobin%%% -induced increases in vascular resistance may place animals' hearts on an unfavorable portion of the Frank-Starting curve as well as complicate further medical treatment by reducing the animals' tolerance to increases in blood viscosity.

1/7/58

12297010 BIOSIS NO.: 199497318295
Pharmacologic and clinical considerations in selecting %%%crystalloid%%%, colloidal, and oxygen-carrying resuscitation fluids: Part 2
AUTHOR: Bertil K (Reprint); Wagner J; D'Amelio F
AUTHOR ADDRESS: Department Family Practice, Piscataway, NJ, USA**USA
JOURNAL: Farmacia Clinica 11 (1): p59-79 1994 1994
ISSN: 0212-6583
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: Spanish

ABSTRACT: The pharmacologic properties of %%%crystalloid%%%, colloidal, and oxygen-carrying resuscitation fluids are described, and the findings of clinical trials of these solutions are discussed. Fluid administration is a fundamental part of resuscitation therapy. %%%Crystalloid%%% solutions supply water and sodium to maintain the osmotic gradient between the extravascular and intravascular compartments. Examples are lactated Ringer's injection and 0.9 % sodium chloride injection. Colloidal solutions, such as those containing albumin, dextrans, or starches, increase the plasma oncotic pressure and effectively move fluid from the interstitial compartment to the plasma compartment. Oxygen-carrying resuscitation fluids, such as whole blood and artificial %%%hemoglobin%%% solutions, not only increase plasma volume but improve tissue oxygenation. Clinically, colloidal solutions are generally superior to crystalloids in their ability to expand plasma volume. However, colloids may impair coagulation, interfere with organ function, and cause anaphylactoid reactions. %%%Crystalloid%%% solutions represent the least expensive option and are less likely to promote bleeding, but they are more likely to cause edema because larger volumes are needed. Favorable experience with inexpensive hypertonic crystalloids with improved plasma volume expansion properties may favor a return to resuscitation with %%%crystalloid%%% solutions. Oxygen-carrying resuscitation fluids are indicated when the patient has lost more than 25 % of the total blood

volume. Tailoring therapy to the individual patient and close monitoring are essential to safe and effective fluid resuscitation.

1/7/59
DIALOG(R)File 5:Biosis Previews(R)

12267789 BIOSIS NO.: 199497289074
Pulse oximetry during lumbar epidural anesthesia: Reliability of values measured at the hand and the foot
AUTHOR: Peduto Vito A (Reprint); Tani Riccardo; Pani Sergio
AUTHOR ADDRESS: Ist. Anestesiol. Univ. Cagliari, Ospedale S. Giovanni di Dio, via Ospedale 46, 09124 Cagliari, Italy**Italy
JOURNAL: Anesthesia and Analgesia 78 (5): p921-924 1994 1994
ISSN: 0003-2999
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Pulse oximetry is dependent upon the presence of a pulsating vascular bed. The signal detection will be impaired in the presence of vasoconstriction or venous congestion, conditions which may occur readily in clinical practice. We compared the oximetric measurements (SpO-2) at the hand and the foot with arterial %%%hemoglobin%%% saturation (SaO-2) during lumbar epidural anesthesia. After administration of a %%%crystalloid%%% solution (20 mL/kg body weight lactated Ringer's solution), 40 adult male patients, scheduled for inguinal hernioplasty, received 15 mL of 0.50% plain bupivacaine into the lumbar epidural space. Two pulse oximeter probes were applied to the index finger and toe of the patients, and the SPO-2 values were recorded continuously. Arterial %%%hemoglobin%%% saturation (SaO-2) was measured using a co-oximeter 5 min before and 30 min after the onset of sensory block. No significant differences were detected between SaO-2 (97.7%, SD 0.4%) and SpO-2 basal values recorded from the hand (97.8%, SD 0.8%) and the foot (98.1%, SD 0.4%). After the onset of epidural anesthesia, a progressive decrease of SpO-2 value recorded from the hand was observed: at 30 min it was 92.3% +- 1.3% (P lt 0.01 compared with baseline). At the same time, the SaO-2 value was 97.5% +- 0.9% (P lt 0.01 compared with SpO-2 from the hand). On the contrary, no significant difference from both basal value and SaO-2 was detected in SPO-2 measurements from the toe during the epidural block. In all patients intraoperative decrease of heart rate and arterial blood pressure was ltoreq 15% from baseline. The decrease of SpO-2 values recorded from sympathetically unaffected areas during epidural anesthesia could be related to vasoconstriction, counterbalancing lumbar preganglionic sympathetic block, which occurred despite perioperative %%%crystalloid%%% volume loading. Because of this compensatory vasoconstriction, pulse oximetry during lumbar epidural anesthesia gives a falsely low reading when the oximetric sensor is placed at the upper limbs.

1/7/60
DIALOG(R)File 5:Biosis Previews(R)

12105129 BIOSIS NO.: 199497126414

A prospective randomized trial evaluating colloid versus %%%crystalloid%%% resuscitation in the treatment of the vascular leak syndrome associated with interleukin-2 therapy
AUTHOR: Pockaj Barbara A; Yang James C (Reprint); Lotze Michael T; Lange Julie R; Spencer William F; Steinberg Seth M; Topalian Suzanne L; Schwartzentruber Douglas J; White Donald E; Rosenberg Steven A
AUTHOR ADDRESS: Natl. Cancer Inst., Surg. Branch, Build. 10, Room 2B-37, 9000 Rockville Pike, Bethesda, MD 20892, USA**USA
JOURNAL: Journal of Immunotherapy With Emphasis on Tumor Immunology 15 (1): p22-28 1994 1994
ISSN: 1067-5582
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Interleukin-2 (IL-2)-based therapy induces a vascular leak syndrome (VLS), manifested by hypotension, tachycardia, and oliguria, as is also seen with septic shock. The optimal method for treating such VLS is not known. A prospective randomized trial was undertaken to compare %%%crystalloid%%% and colloid fluid resuscitation for patients receiving bolus IL-2-based therapy for metastatic cancer. All patients received maintenance %%%crystalloid%%% fluid administration and were randomized to receive %%%crystalloid%%% (0.9% normal saline) or colloid (5% human serum albumin) fluid boluses to maintain acceptable vital signs and urine output. Patients refractory to fluid boluses were given dopamine for oliguria and/or phenylephrine for hypotension. Of 107 patients who completed one cycle of therapy on study, 76 completed a full treatment course (two cycles) on study. The total number of saline and albumin fluid boluses given were 9.5 +- 0.9 versus 7.7 +- 0.7 (p = 0.36, n = 107) for the first cycle and 19.2 +- 1.8 versus 16.1 +- 1.6 (p = 0.33, n = 76) for a complete course, respectively. Although patients receiving saline boluses had significantly more oliguria during a course of therapy, weight gain, number of IL-2 doses, tachycardia, hypotension, vasopressor use, hospital stay, and clinical response rates did not significantly differ between arms. Changes in hematocrit, %%%hemoglobin%%%, protein, albumin, blood urea nitrogen (BUN), and creatinine were analyzed, and patients receiving %%%crystalloid%%% showed greater decreases in albumin (p lt 0.0001) and total protein (p lt 0.05) as expected. A 40-fold greater cost associated with albumin suggested that %%%crystalloid%%% resuscitation be used to treat the VLS associated with IL-2 therapy.

1/7/61
DIALOG(R)File 5:Biosis Previews(R)

12097565 BIOSIS NO.: 199497118850
Myocardial function in early hours after coronary artery bypass grafting: Comparison of two cardioplegic methods
AUTHOR: Biagioli Bonizella (Reprint); Giomarelli Pierpaolo; Gnudi Gianni; Artioli Enrico; Simeone Felicetta; Paolini Giovanni; Marchetti Luca; Grossi Adalberto
AUTHOR ADDRESS: Istituto Chirurgia Toracica e Cardiovascolare, Viale Bracci, 53100 Siena, Italy**Italy
JOURNAL: Annals of Thoracic Surgery 56 (6): p1315-1323 1993 1993
ISSN: 0003-4975
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The theoretical advantages of retrograde blood cardioplegia combined with anterograde blood cardioplegia and warm reperfusion before aortic unclamping during coronary surgery were evaluated in 41 patients (group 2). The early postoperative myocardial function of this group was compared with that of 55 patients (group 1) in whom cold %%%crystalloid%%% cardioplegia was administered. The following variables were measured and analyzed by multivariate statistical analysis: heart rate, left atrial pressure, systemic arterial pressure, cardiac index, left ventricular stroke work index, ventricular function, oxygen delivery, %%%hemoglobin%%%, partial oxygen pressure in mixed venous blood, arteriovenous oxygen difference, carbon dioxide production per square meter, and cardiac isoenzyme of creatine-kinase. The myocardial function improved progressively and cardiac enzymatic release was low for both groups 9 hours after admission to the intensive care unit. However, group 2 had significantly higher oxygen delivery, carbon dioxide production per square meter, cardiac index, left ventricular stroke work index, and ventricular function and significantly lower left atrial pressure and mean systemic arterial pressure than that of group 1. The best separation of group 2 from group 1 occurred at the ninth hour, with a probability of correct recognition of 92.1%.

1/7/62

11881246 BIOSIS NO.: 199396045662
Effect of rapid intravenous %%%crystalloid%%% infusion on uteroplacental blood flow and placental implantation-site oxygen delivery in the pregnant ewe
AUTHOR: Crino Jude P (Reprint); Harris Andrew P; Parisi Valerie M; Johnson Timothy R B
AUTHOR ADDRESS: Dep. Obetet. Gynecol., Lyndon B. Johnson General Hospital, 5656 Kelley St., Houston, TX 77026, USA**USA
JOURNAL: American Journal of Obstetrics and Gynecology 168 (5): p1603-1609 1993
ISSN: 0002-9378
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: OBJECTIVE: Our purpose in this study was to investigate the effects of rapid intravenous %%%crystalloid%%% infusion on placental implantation-site blood flow and oxygen delivery in the near-term pregnant ewe. STUDY DESIGN: Maternal left ventricular, femoral arterial and venous, and bilateral fetal hind limb arterial catheters were placed in nine near-term ewes 5 days before the start of the study. Maternal and fetal arterial blood gas values, maternal hemodynamic measurements, and maternal organ blood flows (microsphere technique) were obtained before and after the intravenous infusion of 2.0 to 2.5 L of normal saline solution. Myometrial and placental implantation-site vascular resistances and oxygen delivery were calculated. The t test for paired comparisons was used for statistical analysis, with p ltoreq 0.05 considered significant. RESULTS: Significant postinfusion increases in maternal mean

arterial pressure, placental implantation-site blood flow, and skin, skeletal muscle, and renal blood flows were recorded. In the six animals that demonstrated a fall in %%%hemoglobin%%% concentration, a significant increase in placental implantation-site oxygen delivery and a significant decrease in placental implantation-site vascular resistance were also seen. No significant changes were seen in myometrial blood flow or myometrial vascular resistance. CONCLUSION: Rapid intravenous %%%crystalloid%%% infusion selectively increases placental implantation-site blood flow in the near-term pregnant ewe and may improve oxygen delivery to the fetus, especially if hemodilution occurs.

1/7/63
DIALOG(R)File 5:Biosis Previews(R)

11820858 BIOSIS NO.: 199395123124
Falciparum malaria in naturally infected human patients: I. Ultrastructural differences between malaria pigments in intraerythrocytic asexual and sexual forms
AUTHOR: El-Shoura Samir M (Reprint); Al-Amari Omar M
AUTHOR ADDRESS: Dep. Pathology, Coll. Med., King Saud Univ., Abha, Saudi Arabia**Saudi Arabia
JOURNAL: Journal of Morphology 215 (3): p201-206 1993
ISSN: 0362-2525
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Venous blood samples were taken from patients naturally infected with the human malaria parasite Plasmodium falciparum. Two types of malaria pigment (MP) particles have been demonstrated in intraerythrocytic asexual forms (trophozoites and schizonts), while a single type was detected in gametocytes. Type I MP particles, found in both asexual and sexual forms, are electron-dense. It is suggested that these are proteinaceous and may be intermediate, utilizable metabolic products that serve as a food reserve during development of the parasite in the human host and also during the growth cycle of the sexual form in the mosquito. In asexual forms, type I particles occur within food vacuoles (FV) containing semidigested %%%hemoglobin%%% (Hg), while they are unenveloped in the cytoplasm of the sexual forms. Type II MP particles, found in electron-lucent residual bodies, are %%%crystalloid%%% and of low electron density. It is suggested that these are the final, waste product of Hg digestion in the asexual forms.

1/7/64
DIALOG(R)File 5:Biosis Previews(R)

11322822 BIOSIS NO.: 199294024663
THE CHANGES OF BLOOD GLUCOSE LEVEL ASSOCIATED WITH MASSIVE INFUSION DURING ACUTE BLEEDING IN ANESTHETIZED RABBITS
AUTHOR: KIM E S (Reprint); JIN S N
AUTHOR ADDRESS: DEP ANESTHESIOL, CATHOLIC UNIV MED COLL, SEOUL, KOREA** KOREA
JOURNAL: Journal of Catholic Medical College 44 (3): p897-903 1991

ISSN: 0368-7015
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: KOREAN

ABSTRACT: The hypoglycemia resulted from acute hemodilution by massive %%%crystalloid%%% infusion is one of the major concerns during massive bleeding. Because the brain cells physiologically use only glucose for energy, the brain metabolism will decreased or stop when serum glucose level falls below the critical level (50-30 mg/dl). In this study the authors evaluated the changes of blood glucose level, mean arterial blood pressure, %%%hemoglobin%%%, pH, PaCO2 and PaO2 following stepwise massive hemodilution with %%%crystalloid%%% (Hartman's solution) infusion in acute bleeding with 20 rabbits. The experimental animals were devided into four groups as HD-1(40-60%), HD-2(61-80%), HD-3(81-90%) and the control group. In the control group, the blood sample was drawn in the same group before hemodilution and showed normal blood picture. The results were as follows: 1) The blood glucose level decreased serially in HD-1 to HD-3 group by stepwise hemodilution. Particularly in HD-3 group hemodilution was brought to 81-90% of control value (P<0.001), whereas blood glucose level dropped slowly about to 65% (97.2.+-.38.0 mg/dl) of control value (148.7.+-.71.7 mg/dl) and it has revealed that the blood glucose level was strongly maintained in the steady value by glucose regulation mechanism without such a concerned hypogglycemia (30-50 mg/dl) during acute massive hemodilution. 2) Mean arterial pressure (MAP) in the control group was 75.+-.15 mmHg and decreased in linear fashion in HD-1 to HD-3 group according to the hemodilutional step. Particularly in HD-3(81-90% dilution) group MAP showed little response with even larger volume of %%%crystalloid%%% infusion than the lost blood. Then the picture seemed to be irreversible shock (P<0.001). 3) The pH was decreased proportionally with hemodilution and showed high metabolic acidosis patterns. This was resulted from diluted "base" in body following massive infusion of %%%crystalloid%%% (P<0.001). But the PaO2 and PACO2 were well maintained with high oxygen and ventilation. It has confirmed that the blood glucose regulation mechanism is kept well to maintain the normal brain metabolism even in the massive hemodilution state by acute bleeding with high oxygen ventilation in the healthy rabbits.

11300168 BIOSIS NO.: 199294002009
ESTIMATION OF TOTAL BODY FLUID SHIFTS BETWEEN PLASMA AND INTERSTITIUM IN MAN DURING EXTRACORPOREAL CIRCULATION
AUTHOR: KOLLER M-E (Reprint); BERT J; SEGADAL L; REED R K
AUTHOR ADDRESS: DEP ANAESTHESIOL, HAUKELAND SYKEHUS, N-5021 BERGEN, NORWAY **NORWAY
JOURNAL: Acta Anaesthesiologica Scandinavica 36 (3): p255-259 1992
ISSN: 0001-5172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Fluid transport between plasma and interstitium during

extracorporeal circulation was studied in seven patients undergoing aortocoronary bypass grafting. The absolute shifts in plasma volume during hypothermia were determined as the difference between input and loss of fluid and the changes in blood volume. The change in haemoglobin concentration due to acute haemodilution when starting extracorporeal circulation was used to calculate the absolute blood plasma volume. The Starling equation for exchange across the capillary wall was used to describe fluid shifts. The total fluid filtered during the 60- to 90-min period of extracorporeal circulation averaged 34.1 .+-. 11.1 (s.d.) ml/min. The total body filtration coefficient from the Starling relationship averaged 0.046 .+-. 0.012 ml/kg .cntdot. mmHg .cntdot. min (0.354 .+-. 0.092 ml/kg .cntdot. kPa .cntdot. min). Haemodilution, reducing colloid osmotic pressure in plasma (COPP) by approximately 10 mmHg (1.3 kPa) will result in a loss of plasma fluid of around 2 l per hour. When corrected for lower fluid viscosity due to hypothermia during extracorporeal circulation, CFC would be about 40% higher, and a filtered volume of nearly 3 l in a normothermic 70-kg person would be expected. %%%Crystalloid%%% haemodilution for shorter periods of time does not produce excessive oedema and thus may be well tolerated.

1/7/66
DIALOG(R)File 5:Biosis Previews(R)

11299162 BIOSIS NO.: 199294001003
HAEMOGLOBIN DILUTION FROM EPIDURAL-INDUCED HYPOTENSION WITH AND WITHOUT FLUID LOADING
AUTHOR: HAHN R G (Reprint)
AUTHOR ADDRESS: DEP ANAESTHESIOL, HUDDINGE UNIV HOSP, S-141 86 HUDDINGE, SWED**SWEDEN
JOURNAL: Acta Anaesthesiologica Scandinavica 36 (3): p241-244 1992
ISSN: 0001-5172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The blood haemoglobin concentration (B-Hb) was measured repeatedly to reflect dilution or concentration changes of the blood during onset of lumbar epidural anaesthesia in 90 elderly men. With %%%crystalloid%%% volume loading (10 ml .cntdot. kg-1 b.w.), the decrease in B-Hb was twice as great for those who developed hypotension during the onset of the blockade as for patients whose arterial pressure remained normal ($P < 0.001$), both when epidural anaesthesia was induced with plain mepivacaine, and when mepivacaine plus adrenaline was used. In a control group where no fluid loading was performed, there was no consistent change in the haemoglobin level, irrespective of blood pressure reaction to the blockade. The results suggest that %%%crystalloid%%% fluid loading allows an increase in blood volume in epidural-induced hypotension.

1/7/67
DIALOG(R)File 5:Biosis Previews(R)

10808847 BIOSIS NO.: 199192054618
PSEUDO-CHEDIAK-HIGASHI ANOMALY IN ACUTE MYELOID LEUKEMIA M2 OF CHILDHOOD

AUTHOR: AONUMA K (Reprint); KOMIYAMA A; AKABANE T
AUTHOR ADDRESS: DEP PEDIATRICS, SHINSHU UNIV SCH MED, 3-1-1 ASAHI, MATSUMOTO 390, JAPAN**JAPAN
JOURNAL: Acta Paediatrica Japonica 32 (6): p651-655 1990
ISSN: 0374-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The frequency and clinical significance of the pseudo-Chediak-Higashi (PCH) anomaly were studied in 20 children with acute myeloid leukemia (AML) M2 in the FAB nomenclature. PCH granules were recognized as giant eosinophilic granules, measuring up to 5 .mu.m, in the cytoplasm of leukemic cells on smears. At the electron microscope level, most PCH granules were round to oval and outlined by a limiting membrane, and contained homogeneous, granular, %%%crystalloid%%%, rod-like or myelin-like materials. The PCH anomaly was demonstrable in five (25.0%) of the 20 patients, which indicates that the anomaly is not rare in childhood AML M2. There were no differences between PCH anomaly-positive and PCH anomaly-negative groups with regard to hepatosplenomegaly, %%%hemoglobin%%% levels, white blood cell counts, bone marrow cellularity, t(8q-, 21q+) chromosome abnormalities or prognoses. Circulating leukemic cells were observed less frequently in the PCH anomaly-positive group than in the PCH anomaly-negative group ($p < 0.05$); the leukemic cells were not demonstrable in three of the five patients in the former group, although they were detected in all 15 patients in the latter group. The existence of PCH granules and/or a defect of the cytoskeleton responsible for the PCH anomaly in leukemic cells may impede their movement from the bone marrow to the peripheral blood.

1/7/68
DIALOG(R)File 5:Biosis Previews(R)

09553790 BIOSIS NO.: 198987001681
A COMPARISON OF INTERMITTENT VERSUS CONTINUOUS AORTIC CROSSCLAMPING DURING MULTIDOSE CARDIOPLEGIC ARREST AND THE POSSIBLE PARTICIPATION OF OXYGEN TOXICITY IN THE CELLULAR INJURY INDUCED BY REPERFUSION OF ISCHEMIC MYOCARDIUM
AUTHOR: TAMURA M (Reprint); TACHIBANA H; TAKAGI I; SAMEJIMA N
AUTHOR ADDRESS: FIRST DEP SURGERY, ASAHIKAWA MED COLL, ASAHIKAWA, JPN** JAPAN
JOURNAL: Journal of the Japanese Association for Thoracic Surgery 36 (6): p874-882 1988
ISSN: 0369-4739
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: JAPANESE

ABSTRACT: The role of active oxygen in cellular damage induced by reperfusion oxygenation of ischemic myocardium was studied in isolated Langendorff perfused rat hearts. The effect of hydroperoxide (H2O2) on the cardiac tissue was evaluated using %%%hemoglobin%%%-free perfused rat hearts. The H2O2 infusion caused the release of oxidized glutathione into the effluent perfusate which paralleled the formation of ferryl-myoglobin

in the heart. When doses of H2O2 above the level of 300 .mu.M were infused, oxidation of pyridine-nucleotides and of cytochrome aa3 occurred through enhanced mitochondrial glutathione peroxidase reaction and resulted in sudden failure of the cardiac function. These results indicated that the myocardial toxicity of H2O2 may be due to its inhibitory effect on the mitochondrial energy metabolism. Preinfusion of diltiazem into the perfused hearts prevented the failure of the cardiac function upon infusion of high doses of H2O2 (above 300 .mu.M) and the mechanism of this protective effect was also discussed. The efficacy of multidose %%%crystalloid%%% potassium cardioplegia was evaluated in the isolated perfused rat hearts under two conditions 1) 3 hours continuous multidose cardioplegic arrest (CCA), 2) 3 hours intermittent cardioplegic arrest (ICA) with 10 minutes reperfusion after each 60 minute arrest. In the ICA group, there was poor recovery of the cardiac functions and of the oxygen metabolism on reperfusion after 3 hours ischemia, which indicated an inferior myocardial protection. On each intermittent reperfusion and post ischemic reperfusion in the ICA group there was a large increase in glutathione leakage in the effluent, indicating an accelerated glutathione peroxidase reaction. This result suggested that the oxygen toxicity upon reperfusion was significantly severe in the ICA group, resulting in poor functional recovery. From our results obtained from these experimental studies, the possible mechanism for oxygen toxicity in the myocardial cell was discussed.

09190328 BIOSIS NO.: 198886030249
HYDROXYETHYL STARCH 120 DEXTRAN 70 AND ACETATED RINGER'S SOLUTION HEMODILUTION ALBUMIN COLLOID OSMOTIC PRESSURE AND FLUID BALANCE FOLLOWING REPLACEMENT OF BLOOD LOSS IN PIGS
AUTHOR: LINKO K (Reprint); MAKELAINEN A
AUTHOR ADDRESS: DEP ANAESTHESIOL, HELSINKI UNIV CENTRAL HOSP, HAARTMANINKATU 4, SF-00290 HELSINKI 29, FINLAND**FINLAND
JOURNAL: Acta Anaesthesiologica Scandinavica 32 (3): p228-233 1988
ISSN: 0001-5172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Twenty healthy pigs weighing 12-17 kg were anesthetized and the small intestines were exteriorized into saline-moistened gauze. During a 2-h period 4% of the animals' body weight was bled through an arterial cannula in six increments and replaced immediately by the fluid tested: hydroxyethyl starch 120 (HES, Plasmafusin, Orion Corp., Mw 120 000), dextran 70 (DEX) and Ringer's acetate (RA). The amount of fluid infused for replacement of blood loss was equal to the amount of blood withdrawn in the colloid groups but fourfold in the RA group. Five non-bled pigs served as controls. After the hemodilution the laparotomy was closed and the animals received only 5% dextrose (2 ml/kg/min) during a 5-h follow-up period. The synthetic colloids caused a more effective dilution of %%%hemoglobin%%% and albumin than did RA. The colloid osmotic pressure (COP) was well maintained by the plasma substitutes but decreased in the RA group to 64% of the initial values. A stable urinary output and no edema formation was found in the HES and DEX groups. The RA animals were

unable to excrete the excess %%%crystalloid%%%, which resulted in a strikingly positive fluid balance persisting throughout the study. Thus, the synthetic colloids were superior to RA in expansion of the plasma volume, maintenance of the COP and prevention of fluid accumulation. The effect of the two colloids was similar except that COP was slightly better maintained during the follow-up period in animals which received HES 120.

09161547 BIOSIS NO.: 198886001468
HIGH 2 3 DPG BLOOD CARDIOPLEGIA AND MYOCARDIAL PRESERVATION DURING CARDIOPULMONARY BYPASS
AUTHOR: CARD R T (Reprint); PRASAD K; BHARADWAJ B; HNATUK L A P; MACFADYEN M A
AUTHOR ADDRESS: DEP PHYSIOL, COLL MED, UNIV SASKATCHEWAN, SASKATOON, SASK, CAN S7N 0W0**CANADA
JOURNAL: Angiology 39 (2): p123-131 1988
ISSN: 0003-3197
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Blood may provide superior cardioplegia compared with %%%crystalloid%%% cardioplegic solution. However, the results are controversial. This may be due to a leftward shift of the %%%hemoglobin%%% (Hb)-02 dissociation curve induced by hypothermia, increasing the oxygen affinity for Hb. This effect may negate the potential benefit of blood cardioplegia. The oxygen affinity for Hb can be decreased by increasing the red cell 2,3-diphosphoglycerate (2,3-DPG), and hence, more oxygen can be delivered to the myocardium. The present investigation was undertaken to study the effects of 2,3-DPG-enriched blood cardioplegia on the functional recovery of the myocardium and changes in the coronary sinus red blood cell (RBC) adenosine-triphosphate (ATP), lactate, and RBC DPG after one and a half hours of reperfusion following one hour of ischemic cardiac arrest in dogs. The dogs were divided into three groups: %%%crystalloid%%% (CR); stored blood (SB), and high 2,3-DPG blood (HDPG) cardioplegic groups. Incubation of canine RBC in phosphoenal pyruvate (PEP) led to a 36% increase in DPG and a rightward shift in the Hb-02 dissociation curve. There was a 4 mm Hg shift in the P50. When compared with the CR group, there was a significant decrease in the cardiac index (CI) and left ventricular work index (LVWI) and a significant increase in the total systemic vascular (TSVR) in the SB group. The CI and LVWI of the HDPG group were similar to those of the CR group, but the TSVR was significantly greater in the former group. The LVWI was significantly greater and the TSVR smaller in the HDPG group as compared with those in the SB group. The coronary sinus, lactate, and RBC 2,3-DPG were never significantly different at any point among the three groups, although a trend toward a decrease in lactate with the HDPG group was observed. There was no significant difference in the RBC ATP content from the three different groups except during initial period of ischemic arrest when RBC ATP content of HDPG group was greater than that in CR group. There was a decrease in the Hb content of the blood in all three groups. The decreases were similar in

all the groups except during the postpump period, when the Hb content of the HDPG and SB groups was higher than that of the CR group. These results suggest that stored blood was inferior to %%%crystalloid%%% and HDPG cardioplegia in preserving the myocardial function and cardiac metabolism. However, HDPG cardioplegia was not better than CR cardioplegia in preserving the cardiac function. Better preservation of cardiac function with HDPG as compared with the SB group might be due to a rightward shift in the Hb-O2 dissociation curve.

09095020 BIOSIS NO.: 198885063911
2 2 2 TRIFLUOROETHANOL-INDUCED ENTEROPATHY IN RATS CHEMICALLY OR BACTERIALLY MEDIATED EFFECTS
AUTHOR: KIM J C S (Reprint); FRASER J M; SAMSONOFF W A; KAMINSKY L S; SHIN S J
AUTHOR ADDRESS: WADSWORTH CENT LAB RES, NY STATE DEP HEALTH, ALBANY, NY 12201, USA**USA
JOURNAL: Toxicologic Pathology 15 (4): p388-400 1987
ISSN: 0192-6233
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The lethal effects of the fluorinated ether anesthetic, fluroxene, in rats are a consequence of its metabolism, which is catalyzed by cytochrome P-450 to the toxic metabolite 2,2,2-trifluroethanol (TFE). The anesthetic or TFE (0.21 g/kg) caused decreased white blood cell counts, necrosis of bone marrow and lymphocytes, and decreased small intestine dry weight and was associated with septicemia. To elucidate the mechanism of TFE toxicity in rats we undertook histopathologic, ultrastructural and bacteriologic studies. TFE produced severe edema of intestinal lamina propria and submucosae, dilatation of crypts, loss of surface epithelium, vacuolation and necrosis of intestinal epithelial cells, and infiltration of polymorphonuclear leukocytes into the edematous lamina propria. Intestinal epithelial villi lost their cellular tissue integrity. Coccobacillary organisms were numerous in the ulcerated intestine. Hemolytic Escherichia coli were isolated from intestinal tissue at a two-log increase in concentration relative to controls. Hemograms from TFE-treated rats exhibited marked leukopenia and morphologic differences. The platelets lost their discord shape, extended pseudopods, and centralizing granules. %%%Hemoglobin%%% precipitation as Heinz bodies and %%%crystalloid%%% structures were observed in TFE-treated rats. Together the data suggest that TFE-induced enteropathy was most probably due to E. coli precipitated from TFE-mediated alterations in the population of small intestinal microbes. The antibiotics erythromycin, active against gram-positive bacteria, and streptomycin, active against gram-negative bacteria, and the antiendotoxin, polymyxin B, were administered to rats prior to TFE in an effort to differentiate between these mechanisms by altering the intestinal bacteria populations. The results indicate that the TFE-induced small intestinal lesions are initiated by the direct focal necrotic effect of TFE or its metabolites on the small intestinal epithelium. The focal coagulation necrosis produced by TFE predisposes

the animals to lethal enteritis and systemic bacteremia.

1/7/72
DIALOG(R)File 5:Biosis Previews(R)

08668511 BIOSIS NO.: 198784022660
HEMODYNAMICS EFFECTS OF HYPERTONIC SODIUM CHLORIDE DURING SURGICAL TREATMENT OF AORTIC ANEURYSMS
AUTHOR: AULER J O C JR (Reprint); PEREIRA M H C; GOMIDE-AMARAL R V; STOLF N G; JATENE A D; ROCHA E SILVA M
AUTHOR ADDRESS: FUNDACAO ZERBINI, AV ENEAS DE CARVALHO DE AGUIAR 44, SAO PAULO, 05508, SP, BRAZIL**BRAZIL
JOURNAL: Surgery (St Louis) 101 (5): p594-601 1987
ISSN: 0039-6060
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Thoracoabdominal aortic surgery with aortic clamping is normally associated with major volemic shifts when the clamp is removed. This study compares the hemodynamic effects of hypertonic (HS) and isotonic (IS) solutions of sodium chloride (NaCl) infusions on the severe hypotension which follows aortic unclamping. Five consecutive patients received HS, and five received IS immediately after aortic unclamping. Blood loss, diuresis, and blood and %%%crystalloid%%% infusions were monitored throughout the operation. Blood gasses, and pH, and hematocrit, %%%hemoglobin%%%, and plasma electrolyte levels were controlled during and 24 hours after surgery. Systemic arterial pressure, pulmonary arterial and wedge pressures, cardiac output, and systemic and pulmonary vascular resistance were monitored at the start of the operation, during aortic clamping, immediately after unclamping, immediately after HS or IS NaCl infusion and at the end of the operation. Patients who received HS NaCl exhibited higher pulmnary arterial and wedge pressures, higher cardiac index, and lower systemic and pulmonary vascular resistances immeditely after the infusion. These patients required less volume transfusion than patients who received IS NaCl, despite slightly higher blood losses. It is concluded that HS NaCl is useful for the treatment of human hemorrhagic shock.

1/7/73
DIALOG(R)File 5:Biosis Previews(R)

08620635 BIOSIS NO.: 198783099526
EFFECTS OF RESUSCITATION FROM HEMORRHAGIC SHOCK ON CEREBRAL HEMODYNAMICS IN THE PRESENCE OF AN INTRACRANIAL MASS
AUTHOR: POOLE G V JR (Reprint); PROUGH D S; JOHNSON J C; STULLKEN E H; STUMP D A; HOWARD G
AUTHOR ADDRESS: DEP ANESTHESIA, BOWMAN GRAY SCH MED, 300 S HAWTHORNE RD, WINSTON-SALEM, NC 27103, USA**USA
JOURNAL: Journal of Trauma 27 (1): p18-23 1987
ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: This study compares intracranial pressure, cerebral blood flow, and cerebral oxygen transport during hemorrhagic shock and following fluid resuscitation with %%%crystalloid%%% or colloid solution in a canine model with an epidural mass lesion. After placement of an epidural balloon, intracranial pressure was increased to 30 mm Hg for 5 minutes and then permitted to vary without further manipulation. Hemorrhagic shock was produced by the rapid removal of blood to achieve a mean arterial pressure of 55 mm Hg for 30 minutes. Resuscitation then was performed with intravenous lactated Ringer's solution, 60 ml/kg, or with 6.0% hetastarch, 20 ml/kg. Following both solutions mean arterial pressure and cardiac output were increased and %%%hemoglobin%%% concentration was reduced. Intracranial pressure was significantly lower immediately after resuscitation in the hetastarch group; it then gradually increased so that the difference was much less 1 hour later. Cerebral blood flow decreased during shock and was not restored by either fluid; cerebral oxygen transport fell further with resuscitation in both groups due to hemodilutional reductions in %%%hemoglobin%%%. Although colloid resuscitation improved systemic hemodynamics and maintained lower intracranial pressure, it failed, as did %%%crystalloid%%% resuscitation, to restore cerebral oxygen transport to prehemorrhagic shock levels.

08547922 BIOSIS NO.: 198783026813
EFFECT OF DEXTROSE-%%%CRYSTALLOID%%% PRIMING SOLUTION ON FLUID REQUIREMENTS AND URINE OUTPUT DURING CARDIOPULMONARY BYPASS
AUTHOR: METZ S (Reprint); HACKER J
AUTHOR ADDRESS: DIV CARDIOVASCULAR ANESTHESIA, TEXAS HEART INST, PO BOX 20269, HOUSTON, TEXAS 77225, USA**USA
JOURNAL: Texas Heart Institute Journal 13 (3): p341-344 1986
ISSN: 0730-2347
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: We examined the influence of the addition of dextrose to %%%crystalloid%%% cardiopulmonary bypass priming solution. Ten patients received only lactated Ringer's solution during the perioperative period and as their cardiopulmonary bypass priming solution, while ten others, managed identically in all other respects, received only 5% dextrose in lactated Ringer's solution (D5LR). During cardiopulmonary bypass, patients who did not receive glucose required more supplementary fluid (20.0 vs. 2.2 ml Kg-1 hr-1) to maintain adequate flow rates, but made less urine (1.1 vs. 2.8 ml Kg-1) than their glucose-treated cohorts. Postoperative %%%hemoglobin%%% was significantly lower in the group receiving lactated Ringer's solution (-14%) but not in the patients receiving D5LR (-6%). We conclude that the addition of dextrose to a %%%crystalloid%%% priming solution decreases intraoperative fluid requirements and helps restore precardiopulmonary bypass %%%hemoglobin%%% without the need for diuretics or blood products.

1/7/75
DIALOG(R)File 5:Biosis Previews(R)

08485960 BIOSIS NO.: 198733092565
PLASMA VOLUME EXPANDERS AN OVERVIEW
BOOK TITLE: INTERNATIONAL ASSOCIATON OF BIOLOGICAL STANDARDIZATION (ED.). DEVELOPMENTS IN BIOLOGICAL STANDARDIZATION, VOL. 67. STANDARDIZATION IN BLOOD FRACTIONATION INCLUDING COAGULATION FACTORS; SYMPOSIUM, MELBOURNE, VICTORIA, AUSTRALIA, MAY 7-9, 1986. VII+382P. S. KARGER AG: BASEL, SWITZERLAND; NEW YORK, NEW YORK, USA. ILLUS. PAPER
AUTHOR: CRONIN K D (Reprint)
AUTHOR ADDRESS: ST-VICENT'S HOSP, VICTORIA PARADE, FITZROY, VIC 3065, AUSTRALIA**AUSTRALIA
SERIES TITLE: Developments in Biological Standardization p113-118 1987
ISSN: 0301-5149 ISBN: 3-8055-4607-6
DOCUMENT TYPE: Book; Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

1/7/76
DIALOG(R)File 5:Biosis Previews(R)

08045353 BIOSIS NO.: 198681009244
MICROWAVE WARMING OF RESUSCITATION FLUIDS
AUTHOR: LEAMAN P L (Reprint); MARTYAK G G
AUTHOR ADDRESS: DEPARTMENT OF EMERGENCY MEDICINE, ST JOSEPH HOSPITAL, 250 COLLEGE AVENUE, LANCASTER, PENNSYLVANIA 17604, USA**USA
JOURNAL: Annals of Emergency Medicine 14 (9): p876-879 1985
ISSN: 0196-0644
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Hypothermia is a common complication in fluid resuscitation of the hypovolemic patient. Warm intravenous (IV) fluids have been shown to be a valuable adjunct in volume replacement to prevent this complication. A rapid method of warming IV fluids is the microwave oven. Heating time for liter bags of %%%crystalloid%%% to 39.degree. C was determined to be two minutes at high power,. 600 W. Fresh frozen plasma was thawed with five 30-second exposures to microwave radiation. Microwave warming of packed red blood cells (PRBC), 4 C to 37 C, resulted in a 17-fold increase in plasma %%%hemoglobin%%% over that of water bath controls, (P > .01). Heating on a warm cycle to room temperature, 21 C, caused an average 26% increase in plasma %%%hemoglobin%%%. Therefore, we do not advocate microwave warming of PRBC because of the possible danger of local overheating, which causes hemolysis. We warm PRBC secondarily by diluting with microwave-warmed, calcium-free %%%crystalloid%%%.

1/7/77
DIALOG(R)File 5:Biosis Previews(R)

07783921 BIOSIS NO.: 198580092816

THE EFFECTS OF LOW FLOW LOW PRESSURE PULSATILE BYPASS
AUTHOR: BELCHER P (Reprint); LENNOX S C
AUTHOR ADDRESS: BROMPTON HOSP, FULHAM RD, LONDON SW3 6HP, ENGL, UK**UK
JOURNAL: Journal of Cardiovascular Surgery 26 (3): p223-227 1985
ISSN: 0021-9509
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The effects of low flow, low pressure pulsatile bypass were studied in 90 consecutive patients undergoing coronary artery surgery. Overall pump flow rate (OFR) was 19-49 (mean 31 .+-. 7) ml/kg/min at all temperatures. Moderate (28.degree. C) hypothermia was used. When cross-clamped flow was 17-49 (mean 27 .+-. 7) ml/kg/min and mean perfusion pressure 50-60 mmHg, priming volume (PV) was reduced to 1.45 .+-. 0.02 l (range 1.2-2.0 l). PV, cardioplegia and volume additions were considered as total bypass %%%crystalloid%%% (TBC) and this correlated positively with increased postoperative positive water balance ($r = 0.58$, $P < 0.001$). Bypass urine output averaged 135 .+-. 24 ml (range 0-1000 ml) was unrelated to OFR and correlated only with TBC ($r = 0.47$, $P < 0.001$). In 86 a single cardioplegia dose of 0.7 l (range 0.4-0.8 l) sufficed for this ischemic period (mean 46 .+-. 16 min). Four required a further 0.2-0.3 l. Their ischemic times were 44-74 min (mean 59 .+-. 13 PNS). Inotropes were used in only 3 patients. Postoperatively 7 required diuretics for low h urine flow. Of the 76 with normal preoperative renal function urea rose transiently in 15. Three had raised urea for over 9 days. Creatinine rose transiently in 7 but persisted in only 1. Plasma cortisol (n = 78) rose in 67 and fell in 11, indicating, overall, an adequate metabolic response. Plasma free %%%hemoglobin%%% before and after bypass varied widely and did not correlate with flow rate or perfusion time. Three patients had early post-operative neurological dysfunction. One had focal signs. All recovered spontaneously; their OFR were at both ends of the range. Maximum ventilation time was 17 h. Low-flow low-pressure pulsatile bypass is a safe and useful adjunct to cardiac surgery.

0001893187 BIOSIS NO.: 19684900051828
The structure and taxonomic status of Toddia from the cottonmouth snake Agkistrodon piscivorus leucostoma
AUTHOR: MARQUARDT WILLIAM C; YAEGER ROBERT G
AUTHOR ADDRESS: Dep Zool., Colo. State Univ., Fort Collins, Colo., USA
JOURNAL: J PROTOZOOL 14 ((4)): p726-731 1967 1967
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: Of 163 cottonmouth snakes Agkistrodon piscivorus leucostoma from Louisiana, 4 (2.4%) were infected with Toddia Franca, 1911, an erythrocytic parasite said to be a protozoon. In the 4 blood films, Toddia had an average size of 1.65-1.98 u with a total size range of 0.88-3.4 [mu]. In Giemsa-stained slides, the organisms were usually a round red-staining mass which was either homogeneous or sometimes

contained granules. A pattern of growth was seen in which the organisms increased in size and in which there was development of an erythrocytic inclusion. The inclusion, which was not a part of the parasite, developed first as a spheroid band then became altered in shape to a %%%crystalloid%%% square, possibly a break-down product of the host cell %%%hemoglobin%%%. The first noticeable damage to the erythrocytes was to the nuclei, which became nearly round; later, when the %%%crystalloid%%% had formed, the host cell degenerated into a small mass containing a pycnotic nucleus, a remnant of cytoplasm and the Toddia. A review of the literature on Toddia and on Pirhemocyton Chatton and Blanc, 1914 leads to the conclusion that the organisms are closely related and that both are viruses of the DNA type. ABSTRACT AUTHORS: Authors

1/7/79
DIALOG(R)File 5:Biosis Previews(R)

0000768330 BIOSIS NO.: 19532700025566
Ist Stricheria Juergens Stempell 1916 ein synonym of Rickettsia prowazekii Rocha Lima 1916?
AUTHOR: MOOSER H
AUTHOR ADDRESS: U. Zurich
JOURNAL: ZENTRALBL BAKT ABT I ORIG 159 ((1/2)): p11-13 1952 1952
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: Philip's conclusion that S. iurgensi is identical with R. prowazekii (Int. Bull. Bact. Nom. and Tax. 2: 1952; Philip and Bell, Ann. Rev. Microbiol., Stanford U. Press, 1952) is erroneous. S. iurgensi Stempell antedates Rocha - Lima's name by 5 weeks, and hence has priority. However, S. iurgensi is not a micro-organism, but consists of " %%%crystalloid%%% formations probably originating from %%%hemoglobin%%%" in the intestines of lice, which have nothing to do with R. prowazekii. ABSTRACT AUTHORS: Ivan Saphra

1/7/80
DIALOG(R)File 5:Biosis Previews(R)

0000701114 BIOSIS NO.: 19512500034081
Comparative studies on the formation of blood in the ontogenesis of the chicken and the starling
ORIGINAL LANGUAGE TITLE: Vergleichende Untersuchungen uber die Blutbildung in der Ontogenese von Haushuhn (Gallus gallus L.) und Star (Sturnus v. vulgaris L.)
AUTHOR: SANDREUTER ADELHEID
AUTHOR ADDRESS: U. Basel
JOURNAL: ACTA ANAT [BASEL] XI ((Suppl. 14 = 1 a d)): p1-72 1951 1951
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: The genesis of the avian eosinophile leucocytes is thoroughly descr. and compared with the neutrophile and eosinophile leucocytes of

man and mammals. The %%%crystalloid%%% granulated avian leucocytes correspond in their origin with the neutrophiles, the amorphous granulated avian leucocytes with the eosinophiles of mammals. The most important characteristic typical for the avians is an increase in the rate of the multiplication of the red blood cells and the %%%hemoglobin%%%, which coincides with the development of the ability to fly. Striking differences exist in the hemopoiesis of the two species. With the chicken the erythropoiesis is limited to the bone marrow, as soon as the blood formation in the yolk sac ceases. With the starling an intensive erythropoiesis in liver and spleen occurs in the prejuvenile period, in addition to the erythropoiesis Of the bone marrow. This aditional performance of the hemopoietic system is comparable to the transitory organs, which occur in the ontogenesis of nidifugous birds. ABSTRACT AUTHORS: Auth. abst

1/7/81
DIALOG(R)File 5:Biosis Previews(R)

0000254891 BIOSIS NO.: 19330700011407
Etude du milieu dans lequel se cultive le spirochete des poules
AUTHOR: LANDAUER E
JOURNAL: COMPT REND ACAD SCI [PARIS] 193 ((5)): p301-302 1931 1931
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: Addition of egg-white, boiled to remove an unknown harmful substance, to the culture favored growth of these spirochaetes. This property was not due to protein substances, since their coagulation left it unaffected; and the ash of the egg-white was equally effective, indicating that the active substance was a %%%crystalloid%%%. Blood, used in first passages, could be replaced by %%%hemoglobin%%%, globulin extract, or even by substances which dialyzed across collodion. Oxygen, in small amounts, was necessary for cultivation of the spirochaetes, which retained their virulence in culture. ABSTRACT AUTHORS: I. M. Korr

? t s10/7/1-7

10/7/1
DIALOG(R)File 5:Biosis Previews(R)

16447914 BIOSIS NO.: 200200041425
Control of heme reactivity by diffusion: Structural basis and functional characterization in %%%hemoglobin%%% mutants
AUTHOR: Miele Adriana Erica; Draghi Federica; Arcovito Alessandro; Bellelli Andrea; Brunori Maurizio (Reprint); Travaglini-Allocatelli Carlo; Vallone Beatrice
AUTHOR ADDRESS: Department of Biochemical Sciences "A. Rossi Fanelli" and CNR Centre for Molecular Biology, University of Rome "La Sapienza", P.le A. Moro 5, 00185, Rome, Italy**Italy
JOURNAL: Biochemistry 40 (48): p14449-14458 December 4, 2001 2001
MEDIUM: print
ISSN: 0006-2960
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The effect of mutagenesis on O2, CO, and NO binding to mutants of human %%%hemoglobin%%%, designed to modify some features of the reactivity that hinder use of %%%hemoglobin%%% solutions as blood %%%substitute%%%, has been extensively investigated. The kinetics may be interpreted in the framework of the Monod-Wyman-Changeux two-state allosteric model, based on the high-resolution crystallographic structures of the mutants and taking into account the control of heme reactivity by the distal side mutations. The mutations involve residues at topological position B10 and E7, i.e., Leu (B10) to Tyr and His (E7) to Gln, on either the alpha chains alone (yielding the hybrid tetramer HbalphaYQ), the beta chains alone (hybrid tetramer HbbetaYQ), or both types of chains (HbYQ). Our data indicate that the two mutations affect ligand diffusion into the pocket, leading to proteins with low affinity for O2 and CO, and especially with reduced reactivity toward NO, a difficult goal to achieve. The observed kinetic heterogeneity between the alphaYQ and betaYQ chains in HbYQ has been rationalized on the basis of the three-dimensional structure of the active site. Furthermore, we report for the first time an experiment of partial CO binding, selective for the beta chains, to high %%%salt%%% crystals of the mutant HbYQ in the T-state; these crystallographic data may be interpreted as "snapshots" of the initial events possibly occurring on ligand binding to the T-allosteric state of this peculiar mutant Hb.

10/7/2
DIALOG(R)File 5:Biosis Previews(R)

15679244 BIOSIS NO.: 200000397557
Purification, crystallisation and preliminary X-ray study of haemoglobin from Crocodilis palustris and Crocodilis porosus
AUTHOR: Deepthi S; Johnson A; Sathish R; Pattabhi Vasantha (Reprint)
AUTHOR ADDRESS: Department of Crystallography and Biophysics, University of Madras, Guindy Campus, Chennai, 600 025, India**India
JOURNAL: Biochimica et Biophysica Acta 1480 (1-2): p384-387 14 July, 2000
2000
MEDIUM: print
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The unsolved three-dimensional structure of crocodile haemoglobin and its prospects as a blood %%%substitute%%% have led us to initiate the purification and crystallisation of haemoglobin molecules from crocodile species (Crocodilis palustris or mugger and Crocodilis porosus or %%%salt%%% water crocodile). The work has resulted in the prevention of polymerisation of naked haemoglobin molecules using N-ethylmaleimide or iodoacetamide. The purified monomeric haemoglobin molecule of C. porosus was crystallised in two different forms and X-ray diffraction data were collected up to 2 ANG resolution for both forms. Form I: a=53.62, b=53.55, c=103.77 ANG; beta=93.35degree, space group P21, Z=2. Form II: a=71.30, b=54.70, c=80.00 ANG; beta=106.4degree, space group P21, Z=2. Structure solution and rigid body refinement of form I data resulted in a

model with Rfree=0.42 and R=0.35.

10/7/3
DIALOG(R)File 5:Biosis Previews(R)

13255254 BIOSIS NO.: 199698723087
Resuscitation from severe hemorrhage
AUTHOR: Shoemaker William C (Reprint); Peitzman Andrew B; Bellamy Ronald; Bellomo Rinaldo; Bruttig Stephen P; Capone Antonio; Dubick Michael; Kramer George C; McKenzie Jack E; Pepe Paul E; Safar Peter; Schlichtig Robert; Severinghaus John W; Tisherman Samuel A
AUTHOR ADDRESS: CR Drew University Medicine and Science, Department Emergency Medicine King/Drew Medical Center, MP and N34, 1621 E. 120th Street, Los Angeles, CA 90059, USA**USA
JOURNAL: Critical Care Medicine 24 (2 SUPPL.): pS12-S23 1996 1996
ISSN: 0090-3493
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The potential to be successfully resuscitated from severe traumatic hemorrhagic shock is not only limited by the "golden 1 hr," but also by the "brass (or platinum) 10 mins" for combat casualties and civilian trauma victims with traumatic exsanguination. One research challenge is to determine how best to prevent cardiac arrest during severe hemorrhage, before control of bleeding is possible. Another research challenge is to determine the critical limits of, and optimal treatments for, protracted hemorrhagic hypotension, in order to prevent "delayed" multiple organ failure after hemostasis and all-out resuscitation. Animal research is shifting from the use of unrealistic, pressure-controlled, hemorrhagic shock models and partially realistic, volume-controlled hemorrhagic shock models to more realistic, uncontrolled hemorrhagic shock outcome models. Animal outcome models of combined trauma and shock are needed; a challenge is to find a humane and clinically realistic long-term method for analgesia that does not interfere with cardiovascular responses. Clinical potentials in need of research are shifting from normotensive to hypotensive (limited) fluid resuscitation with plasma substitutes. Topics include optimal temperature, fluid composition, analgesia, and pharmacotherapy. Hypotensive fluid resuscitation in uncontrolled hemorrhagic shock with the addition of moderate resuscitative (28 degree to 32 degree C) hypothermia looks promising in the laboratory. Regarding the composition of the resuscitation fluid, despite encouraging results with new preparations of stroma-free %%%hemoglobin%%% and hypertonic %%%salt%%% solutions with colloid, searches for the optimal combination of oxygen-carrying blood %%%substitute%%%, colloid, and electrolyte solution for limited fluid resuscitation with the smallest volume should continue. For titrating treatment of shock, blood lactate concentrations are of questionable value, although metabolic acidemia seems helpful for prognostication. Development of devices for early noninvasive monitoring of multiple parameters in the field is indicated. Molecular research applies more to protracted hypovolemic shock followed by the systemic inflammatory response syndrome or septic shock, which were not the major topics of this discussion.

10/7/4
DIALOG(R)File 5:Biosis Previews(R)

12346453 BIOSIS NO.: 199497367738
Preparation and characterization of liposome-encapsulated haemoglobin by a freeze-thaw method
AUTHOR: Liu L (Reprint); Yonetani T
AUTHOR ADDRESS: Inst. Environ. Med., Univ. Pa., Sch. Med., 1 John Morgan Build., 36th and Hamilton Walk, Philadelphia, PA 19104, USA**USA
JOURNAL: Journal of Microencapsulation 11 (4): p409-421 1994 1994
ISSN: 0265-2048
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Haemoglobin (Hb) was encapsulated into liposomes as a blood %%%substitute%%% by a freeze-thaw method. The encapsulation efficiency was affected by the Hb/lipid ratio, starting Hb concentration, pH and %%%salt%%% concentration. Liposome-encapsulated haemoglobin (LEH) prepared by this method contains 5-10 mM Hb with 4-10 per cent methemoglobin (Met-Hb), depending on the starting Hb/lipid ratio and Met-Hb content. The encapsulated Hb has the same absorption spectrum as free Hb and shows oxygen-dissociation characteristics similar to normal red blood cells when 2,3-diphosphoglycerate is co-entrapped in the liposomes. LEH exhibited some leakage, which was greatly reduced by sequential extrusions of LEH through polycarbonate membranes (1.0 and 0.45 mu-m). Stability of LEH was studied using different Hb preparations, and antioxidants of lipids or/and Hb either at 4 or 37 degree C. alpha-Tocopherol or butylated hydroxytoluene, antioxidants of lipids, inhibited not only the peroxidation of liposomes but also Hb oxidation. Among antioxidants of Hb, NADH was most effective in preventing the oxidation of Hb. Glutathione had a moderate preventive effects. However, catalase had no effect and ascorbate accelerated the oxidation of Hb. Glucose and glutathione decreased the oxidation of Hb only in the Hb preparation obtained by hypotonic lysing, not in that by toluene lysing. These results indicate that the Met-Hb reductase system in the latter is lost or inactivated during isolation.

10/7/5
DIALOG(R)File 5:Biosis Previews(R)

10303191 BIOSIS NO.: 199090087670
%%%SUBSTITUTE%%% BLOOD MEAL FOR INVESTIGATING AND MAINTAINING AEDES-AEGYPTI DIPTERA CULICIDAE
AUTHOR: KOGAN P H (Reprint)
AUTHOR ADDRESS: DEP ENTOMOL, CORNELL UNIV, ITHACA, NY 14853, USA**USA
JOURNAL: Journal of Medical Entomology 27 (4): p709-712 1990
ISSN: 0022-2585
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A defined %%%substitute%%% blood meal has been developed for

feeding Aedes aegypti (L.), a mosquito that normally requires a vertebrate blood meal to produce eggs. This %%%substitute%%% blood meal is a simple mixture of proteins, with salts and adenosine triphosphate added to induce gorging. Protein appears to be the only nutritional requirement. The mixture consists of .gamma.-globulins to initiate the hormonal responses necessary for normal egg development, %%%hemoglobin%%% as a visual marker of feeding, and albumin as a concentrated source of protein to achieve egg yields equivalent to those from blood-fed controls. Ae. aegypti has been reared successfully for eight generations on this %%%substitute%%% blood meal.

10/7/6
DIALOG(R)File 5:Biosis Previews(R)

09607403 BIOSIS NO.: 198987055294
PURIFICATION AND PHYSICAL CHARACTERISTICS OF A %%%HEMOGLOBIN%%% SOLUTION MODIFIED BY COUPLING TO 2 NOR-2-FORMYLPYRIDOXAL 5'-PHOSPHATE NFPLP
AUTHOR: VAN DER PLAS J (Reprint); DE VRIES-VAN ROSSEN A; KOOREVAAR J J; BUURSMA A; ZIJLSTRA W G; BAKKER J C
AUTHOR ADDRESS: C/O PUBLICATION SECRETARIAT, CENTRAL LAB NETHERLANDS RED CROSS BLOOD TRANSFUSION SERVICE, PO BOX 1406, 1006 AK AMSTERDAM, NETH** NETHERLANDS
JOURNAL: Transfusion (Bethesda) 28 (6): p525-530 1988
ISSN: 0041-1132
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Human stroma-free %%%hemoglobin%%% (Hb) was crosslinked with 2-nor-2-formylpyridoxal 5'-phosphate (NFPLP), purified over crosslinked dextran, and eluted with a linear %%%salt%%% gradient. The oxygen dissociation curve of this crosslinked %%%hemoglobin%%% appeared to be shifted to the right with a standard P50 of 49 torr (PO2 for 50% saturation with oxygen at a pH of 7.40 a PCO2 of 40 torr, and a temperature of 37.degree. C) compared with a P50 of 12 of 15 torr for the unmodified Hb. The Hill coefficient n of HbNFPLP was 2.1, versus 2.8 for Hb. The proton Bohr factor of HbNFPLP, calculated from P50 values in the pH range of 7.1 to 7.7, was found to be -0.19, versus -0.29 for unmodified Hb. The oxygen capacity of HbNFPLP was not affected by the crosslinking and was found to be 1.410 ml of O2 per g of HbNFPLP, versus 1.407 ml of O2 per g of Hb for unmodified Hb. Four derivatives of HbNFPLP, i.e., deoxyhemoglobin, oxyhemoglobin, carboxyhemoglobin, and methemoglobin, were prepared, and the light adsorption spectra were recorded in the region of 480 to 680 nm. No differences were detected in comparison with the spectra of unmodified Hb. The .alpha. and .beta. chains of the tetramer were separated by reverse-phase chromatography. Comparison of the elution patterns of the chains of Hb and HbNFPLP revealed a retardation of the .beta. chains due to crosslinking with NFPLP. This indicates that the binding of NFPLP to Hb occurred only between the .beta. chains. Moreover, sodium dodecyl sulfate polyacrylamide gel electrophoresis of the separated chains showed a doubling of the molecular mass of the .beta. chains (.apprx. 31 kD), whereas that of the .alpha. chains was unchanged (.apprx. 15 kD). A HbNFPLP solution can be classified as a well-defined product with physiologic oxygen-binding characteristics.

10/7/7
DIALOG(R)File 5:Biosis Previews(R)

07669895 BIOSIS NO.: 198579088794
HYDROXYETHYL STARCHES DEXTRAN AND BALANCED %%%SALT%%% SOLUTION IN CORRECTION OF HYPOTENSION DURING EPIDURAL ANESTHESIA
AUTHOR: KOSKI E (Reprint); TUPPURAINEN T; MATTILA M; GORDIN A; SALO H
AUTHOR ADDRESS: DEP ANAESTHESIOL, UNIV CENT HOSP, SF-70210 KUOPIO 21, FINLAND**FINLAND
JOURNAL: Acta Anaesthesiologica Scandinavica 28 (6): p595-599 1984
ISSN: 0001-5172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A low MW (38,000) and a medium MW (125,000) hydroxyethyl starch and a medium MW dextran (70,000) solution were compared with a balanced %%%salt%%% solution in 123 patients undergoing operations of the lower extremities in epidural anesthesia; 500 ml of the studied solutions were infused during 15 min after the injection of the epidural anesthetic. The need for etilefrine hydrochloride as a vasoconstrictor in correcting hypotensive reactions was recorded. Changes in Hb, hematocrit (Hct), serum total protein and serum albumin concentrations were measured. The number of patients given etilefrine hydrochloride in the plasma-%%%substitute%%% groups was smaller than in the control group. The differences were, however, not statistically significant. The fall in blood pressure cannot be totally inhibited by administration of 500 ml plasma %%%substitute%%%. According to the differences in Hb, Hct, serum protein and albumin values, the hydroxyethyl starch solutions were significantly more effective plasma substitutes than the balanced %%%salt%%% solution and as effective as dextran. No side effects attributable to the solutions used were observed.

? t s12/7/1-7

12/7/1
DIALOG(R)File 5:Biosis Previews(R)

19069327 BIOSIS NO.: 200600414722
Systemic function, oxygenation and microvascular correlation during treatment of hemorrhagic shock with blood substitutes
AUTHOR: Cheung Anthony T (Reprint); Duong Patricia L; Driessen Bernd; Chen Peter C; Jahr Jonathan S; Gunther Robert A
AUTHOR ADDRESS: Univ Calif Davis, Med Ctr, Dept Pathol and Lab Med, Sacramento, CA 95817 USA**USA
AUTHOR E-MAIL ADDRESS: atcheung@ucdavis.edu
JOURNAL: Clinical Hemorheology and Microcirculation 34 (1-2): p325-334 2006 2006
ISSN: 1386-0291
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Systemic function and oxygenation changes during hemorrhagic shock treatment were continuously monitored and correlated with real-time microvascular changes. After splenectomy, each dog (n = 12) was hemorrhaged (MAP = similar to 50 mmHg; similar to 40% blood loss = 32-36 ml/kg) and randomly assigned to 4 resuscitation groups: autologous/shed blood, %%%hemoglobin%%%-based oxygen-carrier/Oxyglobin(R), %%%crystalloid%%%/saline, and colloid/Hespan(R). Systemic function and oxygenation changes were continuously monitored and measured using standard operating room protocols. Computer-assisted intravital microscopy was used to non-invasively videotape and objectively analyze and quantify real-time microvascular changes in the conjunctival microcirculation. All measurements were made during pre-hemorrhagic (baseline), post-hemorrhagic and post-resuscitation phases of the study. Pre-hemorrhagic microvascular changes were similar in all 12 dogs (venular diameter = 43 +/- 12 mu m; red-cell velocity = 0.6 +/- 0.2 mm/s). All dogs showed similar significant (P < 0.01) post-hemorrhagic microvascular changes: similar to 20% decrease in venular diameter; similar to 80% increase in red-cell velocity. These microvascular changes correlated with post-hemorrhagic systemic function and oxygenation changes. The resuscitations restored microvascular changes to pre-hemorrhagic values; the microvascular reversals also correlated with post-resuscitation systemic function changes in all groups. However, only shed blood resuscitation restored oxygenation level close to pre-hemorrhagic values. All 12 dogs survived resuscitation treatments despite differences in oxygen-carrying capability between groups.

12/7/2
DIALOG(R)File 5:Biosis Previews(R)

17718951 BIOSIS NO.: 200400087720
New blood substitutes of polyfunctional action.
AUTHOR: Sofronov G A; Selivanov E A
JOURNAL: Vestnik Rossiiskoi Akademii Meditsinskikh Nauk (10): p48-51 2003 2003
MEDIUM: print
ISSN: 0869-6047
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Russian

ABSTRACT: The paper deals with two categories of new oxygen-carrying blood %%%substitute%%% solutions (OCBSS), based on a modified %%%hemoglobin%%% (MG) and perfluor-organic carbon emulsion (PCE), and with %%%crystalloid%%% and colloid blood substitutes of the antihypoxic action containing the Crebs' substrate (sodium fumarat). Described are the results of clinical use of Russian OCBSS based on MG (Gelenpol) and on PCE (Perftoran) in 151 patients with hemorrhagic shock and intraoperative blood loss. Both drugs are allowed for medical application in Russia. Gelenpol was administered at 1 to 6 units, perftoran - at 10-15 ml/kg. An improved oxygen status as well as normalization of hemodynamics, microcirculation, rheology, and of blood acid-base balance (ABB) were registered. Gelenpol had a hematosis-stimulating action. The combined use of both drugs or one of them alone in surgery is under discussion. The

OCBSS efficiency can be enhanced when they are used jointly with the first Russian infusion antihypoxants containing sodium furmarat, i.e. Mufasol and Polyoxyfumarin. Both of them were shown to normalize the oxidation in tissues, to recover the mitochondrial metabolism in the liver and myocardium and to improve the blood ABB when used in hypovolemic and hypoxic conditions of different etiologies, in substituting for intraoperative blood losses (gastrointestinal hemorrhages), in polytrauma and destructive cholecystitis as well as in preoperative preparations of patients with diffuse peritonitis. The OCBSS preparations and antihypoxants are undoubtedly drugs of choice in emergency infusion-transfusion therapy and in cases of multiple victims from accidents.

12/7/3
DIALOG(R)File 5:Biosis Previews(R)

17168163 BIOSIS NO.: 200300125273
The influence of %%%crystalloid%%% and colloid replacement solutions in acute normovolemic hemodilution: A preliminary survey of hemostatic markers.
AUTHOR: Jones Stephanie B; Whitten Charles W (Reprint); Despotis George J; Monk Terri G
AUTHOR ADDRESS: Department of Anesthesiology and Pain Management, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Blvd., Dallas, TX, 75390-9068, USA**USA
AUTHOR E-MAIL ADDRESS: charles.whitten@utsouthwestern.edu
JOURNAL: Anesthesia and Analgesia 96 (2): p363-368 February 2003 2003
MEDIUM: print
ISSN: 0003-2999
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LANGUAGE: English

ABSTRACT: Acute normovolemic hemodilution (ANH), in which blood for autologous use is collected immediately before the onset of surgical blood loss, is a recommended autologous blood procurement technique for blood conservation. Both %%%crystalloid%%% and colloid replacement fluids have been used to maintain normovolemia during ANH, but few data are available to justify the use of a particular replacement fluid. Therefore, we designed a prospective, randomized study to determine if the replacement fluid choice affects various coagulation variables and perioperative blood loss. Forty adult patients, ASA physical status 1-3, scheduled for ANH during radical prostatectomy were randomly assigned to one of four replacement fluid groups: (a) Ringer's lactate, (b) 5% albumin, (c) 6% dextran 70 (DEX), or (d) 6% hetastarch (HES). After the induction of a standardized general anesthetic, all patients underwent ANH to a final %%%hemoglobin%%% level of 9 g/dL. Complete blood count, prothrombin time, partial thromboplastin time, fibrinogen, factors V and VIII levels, bleeding time, and thromboelastography (TEG(R)) measurements were obtained at similar time points in the procedure. When compared with baseline, activated partial thromboplastin time decreased and factor VIII levels increased in the postanesthesia care unit in both the Ringer's lactate and 5% albumin groups. The DEX and HES groups demonstrated a decrease in TEG(R) maximum amplitude between preoperative and postanesthesia care unit measurements and TEG(R) alpha (angle) was

decreased from baseline in the DEX group. The changes in factor VIII, activated partial thromboplastin time, and TEG(R) measurements indicate that HES and DEX may attenuate the hypercoagulability related to surgery.

12/7/4
DIALOG(R)File 5:Biosis Previews(R)

16758669 BIOSIS NO.: 200200352180
Kinetics of isotonic and hypertonic plasma volume expanders
AUTHOR: Drobin Dan (Reprint); Hahn Robert G
AUTHOR ADDRESS: Department of Anesthesiology, Soder Hospital, S-118 83, Stockholm, Sweden**Sweden
JOURNAL: Anesthesiology (Hagerstown) 96 (6): p1371-1380 June, 2002 2002
MEDIUM: print
ISSN: 0003-3022
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Major differences in plasma volume expansion between infusion fluids are fairly well known, but there is a lack of methods that express their dynamic properties. Therefore, a closer description enabled by kinetic modeling is presented. Methods: Ten healthy male volunteers received, on different occasions, a constant-rate intravenous infusion over 30 min consisting of 25 ml/kg of 0.9% saline, lactated Ringer's solution, acetated Ringer's solution, 5 ml/kg of 7.5% saline, or 3 ml/kg of 7.5% saline in 6% dextran. One-, two-, and three-volume kinetic models were fitted to the dilution of the total venous %%%hemoglobin%%% concentration over 240 min. Osmotic fluid shifts were considered when hypertonic fluid was infused. Results: All fluids induced plasma dilution, which decreased exponentially after the infusions. The ratio of the area under the dilution-time curve and the infused fluid volume showed the following average plasma-dilution dose-effect (efficiency), using 0.9% saline as the reference (= 1): lactated Ringer's solution, 0.88; acetated Ringer's solution, 0.91; hypertonic saline, 3.97; and hypertonic saline in dextran, 7.22 ("area approach"). Another comparison, based on kinetic analysis and simulation, showed that the strength of the respective fluids to dilute the plasma by 20% within 30 min was 0.94, 0.97, 4.44, and 6.15 ("target dilution approach"). Between-subject variability was approximately half as high for the latter approach. Conclusions: The relative efficiency of %%%crystalloid%%% infusion fluids differs depending on whether the entire dilution-time profile or only the maximum dilution is compared. Kinetic analysis and simulation is a useful tool for the study of such differences.

12/7/5
DIALOG(R)File 5:Biosis Previews(R)

16216557 BIOSIS NO.: 200100388396
Minimising blood loss during radical prostatectomy by minimal intraoperative fluid administration
AUTHOR: Shahin O (Reprint); Studer U E (Reprint)
AUTHOR ADDRESS: Department of Urology, University of Berne, Berne,

Switzerland**Switzerland
JOURNAL: European Urology 39 (Suppl. 5): p91 March, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: XVIth Congress of the European Association of Urology Geneva, Switzerland April 07-10, 2001; 20010407
SPONSOR: European Association of Urology
ISSN: 0302-2838
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

12/7/6
DIALOG(R)File 5:Biosis Previews(R)

15600431 BIOSIS NO.: 200000318744
Two cases of extreme hemodilution caused by massive hemorrhage immediately after start of operation
AUTHOR: Yamaguchi Shigeki (Reprint); Shinohara Masayuki (Reprint); Mishio Mutsuo (Reprint); Okuda Yasuhisa (Reprint); Kitajima Toshimitsu (Reprint)
AUTHOR ADDRESS: First Department of Anesthesiology, Dokkyo University School of Medicine, Tochigi, 321-0293, Japan**Japan
JOURNAL: Japanese Journal of Anesthesiology 49 (4): p391-395 April, 2000 2000
MEDIUM: print
ISSN: 0021-4892
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese

ABSTRACT: We describe two cases of extreme hemodilution due to large amounts of fluid infusion for unexpected massive hemorrhage. In both cases, unexpected hemorrhage with difficult hemostasis occurred within 60 min after the start of the operation. For lack of transfused blood, large amounts of fluid infusion using %%%crystalloid%%% and colloid solutions including 5% albumin, plasma %%%expander%%% and lactated Ringer's solution were administered to maintain circulatory blood volume. The %%%hemoglobin%%% concentration and hematocrit had been below 2.0 g cntdot dl-1 and 10% for approximately one hour, respectively. The extreme hemodilution improved by the urgent blood transfusion. In one case, intraoperative autotransfusion with Cell-Saver(R) was performed. In spite of intraoperative extreme hemodilution, their postoperative courses were uneventful. Intraoperative awareness was present in both cases.

12/7/7
DIALOG(R)File 5:Biosis Previews(R)

13965242 BIOSIS NO.: 199799599302
Enhancement of brain pO-2 during cardiopulmonary bypass using a hyperosmolar oxygen carrying solution
AUTHOR: Runge T M (Reprint); McGinity J W; Frisbee S E; Briceno J C (Reprint); Ottmers S E (Reprint); Calhoon J H; Hantler C B; Korvick D L; Ybarra J R
AUTHOR ADDRESS: Biomed. Engineering Program, Univ. Texas at Austin, Austin,

TX 78712, USA**USA
JOURNAL: Artificial Cells Blood Substitutes and Immobilization Biotechnology 25 (3): p297-308 1997 1997
ISSN: 1073-1199
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: During the past decade a new syndrome has been recognized: cerebral hypoxia secondary to cardiopulmonary bypass, resulting in impairment of cognitive memory. The incidence of the syndrome appears to be no less that 30% in patients over 65 years of age undergoing cardiac surgery. There are several factors contributing to hypoxia produced by cardiopulmonary bypass. One of these factors is %%%crystalloid%%% pump prime and replacement solutions devoid of (1) oxygen carrying capacity and (2) devoid of protein and its colloid osmotic pressure. This shortcoming of cardiopulmonary %%%crystalloid%%% solutions is partially responsible for two of the three major pathologic effects of cardiopulmonary bypass. (1) hypoxia (2) interstitial fluid accumulation (anasarca, water-logging, edema). This report describes an oxygen carrying hyperosmolar solution which enhances brain pO-2, and diminishes interstitial fluid accumulation. This blood %%%substitute%%% consists of perfluorcarbons and saccharides, but could consist of a %%%hemoglobin%%% variant plus hyperosmolar ingredients other than saccharides. The advantage of a perfluorochemical is its ability to access small channels and to be centrifuged off the patient post-operatively with a cell saver. The advantage of saccharides is that they can be metabolized by the patient for energy, and they produce a moderate diuresis coming off bypass.

? t s5/7/1-29

5/7/1
DIALOG(R)File 5:Biosis Previews(R)

0019509467 BIOSIS NO.: 200700169208
An autopsy case of a depressed and reclusive patient who went into a hyperglycemic %%%hyperosmolar%%% coma
AUTHOR: Toyonaga Masae; Sato Yuichi; Nunoi Kiyohide; Iwase Masanori; Iida Mitsuo; Akiba Jun; Yokokura Yoshitake; Yagihashi Souroku
JOURNAL: Journal of the Japan Diabetes Society 49 (9): p737-742 2006 2006
ISSN: 0021-437X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese

ABSTRACT: A 35-year-old man was admitted to our hospital after going into a hyperglycemic %%%hyperosmolar%%% coma. He had untreated depression and was reclusive. He was found by his family, complaining of agony, abdominal pain and dysuria on the night before admission. He was admitted to the local hospital and underwent a glucose-free transfusion. Early the next morning, however, he fell into a comatose state. He exhibited marked hyperglycemia, 2,380 mg/dl and mild metabolic acidosis due to renal failure. Thereafter, he was transferred to our hospital. His HbA(1C) was 11.1% and the biochemical findings showed severe dehydration and uremia.

Although he was treated with massive transfusion with insulin, he soon fell into shock, and was refractory to intensive treatment, including antibiotics, ventilatory support and polymixin B immobilized fiber therapy. The patient died 27.5 hours after discovery. Clinically, we considered this case as type 2 diabetes mellitus with obesity. However, serum C-peptide level was not detectable and histologically the islets of Langerhans were markedly decreased in size and number, without the characteristic insulitis. The anti-GAD antibody was negative. As a consequence, we considered the etiology of this case to be chronic type 1B diabetes mellitus or the destruction of the B cells by oxidative stress from prominent glucose toxicity. Recently, the number of young persons, who are reclusive with mental or social maladjustments, has been increasing. Therefore, we have to pay much more attention to obese people who are reclusive.

5/7/2
DIALOG(R)File 5:Biosis Previews(R)

18908741 BIOSIS NO.: 200600254136
Nonketotic %%%hyperosmolar%%% coma in a patient with type 1 diabetes-related diabetic nephropathy: Case report
AUTHOR: Dogan Ekrem (Reprint); Erkoc Reha; Sayarlioglu Hayriye; Buyukbese Akif
AUTHOR ADDRESS: YYU, Tip Fak, TR-65200 Van, Turkey**Turkey
JOURNAL: Advances in Therapy 22 (5): p429-432 SEP-OCT 2005 2005
ISSN: 0741-238X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Nonketotic %%%hyperosmolar%%% coma (NHC) is characterized by severe hyperglycemia; absence of, or only slight ketosis; nonketotic acidosis; severe dehydration; depressed sensorium or frank coma; and various neurologic signs. This condition is uncommon in type 1 diabetes. Because of little or no osmotic diuresis, in patients with diabetic nephropathy, increases in plasma osmolality and therefore the likelihood of neurologic symptoms are limited. A 20-year-old male patient with type 1 diabetes with chronic kidney disease on conservative treatment (glomerular filtration rate [GFR], 18 mL/dk) presented with acute nonketotic %%%hyperosmolar%%% syndrome. The patient was admitted presenting with thirst, fatigue, and drowsiness. Blood biochemistry levels were urea 87 mg/dL, creatinine 5.09 mg/dL, glucose 830 mg/dL, glycosylated %%%hemoglobin%%% (HbA(1c)) 8%, C peptide < 0.3 ng/mL, sodium 131 mmol/L, chloride 93 mmol/L, potassium 5.2 mmol/L, and calculated serum osmolality 385 mOsm/kg. The presumptive diagnosis on admission was nonketotic %%%hyperosmolar%%% syndrome precipitated by urinary infection. This is the first case report of %%%hyperosmolar%%% coma in a patient with type 1 diabetes with chronic kidney disease.

5/7/3
DIALOG(R)File 5:Biosis Previews(R)

18239776 BIOSIS NO.: 200500146841

Diagnostic values of combined glucose and lactate values in cerebrospinal fluid and vitreous humour - our experiences
AUTHOR: Karlovsek M Z (Reprint)
AUTHOR ADDRESS: Fac MedInst Forens Med, Univ Ljubljana, Korytkova 2, Ljubljana, 1000, Slovenia**Slovenia
AUTHOR E-MAIL ADDRESS: dekanat@mf.uni.lj.si
JOURNAL: Forensic Science International 146 (Suppl. S): pS19-S23 December 2, 2004 2004
MEDIUM: print
ISSN: 0379-0738
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The final diagnosis of death in hypoglycaemic or diabetic coma should always be done as a synopsis of anamnestic response, morphology, biochemical (glucose, lactate, HBA1c, ketonic bodies, insulin, and C-peptide) and toxicological findings. High glucose levels in vitreous humour (more than 13 mmol/L, 234 mg/dL) or combined values of glucose and lactate in vitreous humour or in cerebrospinal fluid over threshold values of 23.7 mmol/L (427 mg/dL) and 23.4 mmol/L (422 mg/dL) respectively, can be an indicator of the pre-mortem hyperglycaemic state with fatal outcome. The determination of glycated haemoglobin, acetone and other ketone bodies improve the diagnostic values of the whole procedure. Diabetic ketoacidosis (blood aceton > 0.3 g/L) is more often the cause of death of diabetic patients than the non-ketotic %%%hyperosmolal%%% state. Hypoglycaemia is deemed fatal if the combined values are lower than 5.5 mmol/L (100 mg/dL) and can not be excluded if they are lower than 8.9 mmol/L (160 mg/dL). Two cases of detected hypoglycaemia are described further. A psychiatric patient with diabetes (Hba1c 8.4%) committed suicide with an insulin overdose. The combined values of glucose and lactate in vitreous humour and in cerebrospinal fluid were 3.3 and 4.1 mmol/l, respectively. In another case a low combined glucose and lactate value (8.7 mmol/L) in vitreous humour indicated, besides the high concentration of glibenclamide (0.9 mg/L) in the blood of a driver with a poorly controlled diabetic condition (Hba1c = 10.6%), a state of decreasing blood glucose in the time before the accident causing the driver to feel unwell and behave inappropriately.

5/7/4

18107300 BIOSIS NO.: 200500014365
Relationship of baseline glucose homeostasis to hyperglycemia during medical critical illness
AUTHOR: Cely Cynthia M; Arora Pratheep; Quartin Andrew A (Reprint); Kett Daniel H; Schein Roland M H
AUTHOR ADDRESS: Sect Crit Care Med 111, Miami VAMC, 1201 NW 16th St, Miami, FL, 33125, USA**USA
AUTHOR E-MAIL ADDRESS: aquartin@med.miami.edu
JOURNAL: Chest 126 (3): p879-887 September 2004 2004
MEDIUM: print
ISSN: 0012-3692 _(ISSN print)
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Study objective: To elucidate the relationship of baseline glucose control and acute stimuli with hyperglycemia during medical critical illness. Design: Prospective cohort study. Setting: Medical ICU (MICU) of a university affiliated hospital. Patients: Convenience sample of 100 medical patients meeting criteria for severity of illness and anticipated length of stay and not admitted to the hospital for diabetic ketoacidosis or a hyperglycemic %%%hyperosmolar%%% state. Interventions: None. Measurements and main results: Patients were categorized as having normal, abnormal, or unevaluable baseline glucose control based on history and glycosylated %%%hemoglobin%%% (HbA1c). Data collection included blood glucose measurements within 120 h of MICU admission, and dosing of norepinephrine, corticosteroids, propofol, and carbohydrates. Average blood glucose and times over glycemic thresholds were calculated using linear interpolation. Hyperglycemia (glucose > 110 mg/dL) was pervasive in all groups. Among the 51 patients with normal baseline glucose control, HbA1c was correlated with hyperglycemic time ($p < 0.01$, $R2 = 0.15$). Multiple regression found HbA1c, age, corticosteroid dose, and carbohydrate administration independently associated with hyperglycemic time ($p < 0.05$ for each, total $R2 = 0.49$) in these patients, while body mass index, APACHE (acute physiology and chronic health evaluation) II, norepinephrine dose, propofol dose, gender, and sepsis were not associated with time > 110 mg/dL. Among normal subjects, HbA1c was independently predictive of peak and average glucose, and the fraction of time glucose was > 150 mg/dL and > 200 mg/dL ($p < 0.05$ for each). Patients with abnormal baseline glucose control had significantly more hyperglycemia than patients with normal baseline control. Conclusions: Even in patients without evidence of abnormal glucose homeostasis at baseline, hyperglycemia is common during critical illness. Time exposure to hyperglycemia is correlated with acute stressors and baseline glucose regulation, as characterized by HbA1c. Patients with low HbA1c levels are less disposed to hyperglycemia during severe illness than patients with higher, but still normal, HbA1c.

5/7/5
DIALOG(R)File 5:Biosis Previews(R)

18088430 BIOSIS NO.: 200400469659
A case of central pontine myelinolysis with %%%hyperosmolar%%% nonketotic state
AUTHOR: Kitahara A; Hashimoto D; Mochizuki H; Kitakami F; Suzuki H; Yoshimi T; Kawai K; Nakamura H
JOURNAL: Journal of the Japan Diabetes Society 46 (11): p881-885 2003 2003
MEDIUM: print
ISSN: 0021-437X _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: Japanese

5/7/6
DIALOG(R)File 5:Biosis Previews(R)

17895155 BIOSIS NO.: 200400265912
New additions to the intensive care armamentarium.
AUTHOR: Rice Todd W (Reprint); Bernard Gordon R
AUTHOR ADDRESS: Division of Allergy, Pulmonary and Critical Care Medicine, Vanderbilt University School of Medicine, T-1217 MCN, Center for Lung Research, Nashville, TN, 37232-2650, USA**USA
AUTHOR E-MAIL ADDRESS: todd.rice@vanderbilt.edu
JOURNAL: Drugs of Today 40 (2): p157-170 February 2004 2004
MEDIUM: print
ISSN: 0025-7656 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Many advances have improved the care of critically ill patients, but only a few have been through the use of pharmaceutical agents. Recently, the US Food and Drug Administration (FDA) approved drotrecogin alfa (activated), or recombinant human activated protein C, for the treatment of patients with a high risk of death from severe sepsis. Drotrecogin alfa (activated) has antiinflammatory, antithrombotic and fibrinolytic properties. When given as a continuous intravenous infusion, recombinant human activated protein C decreases absolute mortality of severely septic patients by 6.1%, resulting in a 19.4% relative reduction in mortality. The absolute reduction in mortality increases to 13% if the population treated is restricted to patients with an APACHE II score greater than 24, as suggested by the FDA. The most frequent and serious side effect is bleeding. Severe bleeds increased from 2% in patients given placebo to 3.5% in patients receiving drotrecogin alfa (activated). The risk of bleeding was only increased during the actual infusion time of the drug, and the bleeding risk returned to placebo levels 24 hours after the infusion was discontinued. Patients treated in the intensive care unit frequently develop anemia, usually severe enough to require at least one transfusion of red blood cells. With the recent discovery of the harmful effects of allogeneic red blood cell transfusions and the increasing shortage of available red blood cell products, emphasis has been placed on minimizing transfusions. Patients who receive exogenous recombinant human erythropoietin maintain higher %%%hemoglobin%%% levels, in spite of requiring fewer transfusions during their stay in the intensive care unit. Recombinant human erythropoietin appears to be effective whether it is given as 300 units/kg of body weight subcutaneously every other day or as 40,000 units subcutaneously every week. Differences in %%%hemoglobin%%% values were not apparent until at least one week of therapy, but they continued to diverge after that initial week. Furthermore, the incidence of adverse events was similar to that of patients receiving placebo and there was no difference in mortality, suggesting that avoidance of blood transfusions did not translate into increased survival. Thus, recombinant human erythropoietin appears to be both safe and effective in treating the anemia found in critically ill patients, but it is less clear that such treatment is cost effective, especially in the higher dose regimens. Hypotension in patients with septic shock is often difficult to correct. Despite enormous dosages of catecholamines, many of these patients continue to have inadequate blood pressures. Inadequate levels of vasopressin have been identified in patients with septic shock, as well as in other patients with hypotension secondary to refractory vasodilatation. Vasopressin is a peptide hormone secreted from the posterior pituitary in

response to %%%hyperosmolality%%%, hypovolemia or hypotension. Levels of vasopressin initially rise in patients with septic shock, but as hypotension persists, vasopressin levels fall below normal. Administration of exogenous vasopressin in physiologic dosages significantly increases blood pressure in patients with shock associated with sepsis and other vasodilatory states. This rise in blood pressure is often significant enough that endogenous catecholamines can be decreased and frequently discontinued entirely. Early withdrawal of the vasopressin replacement infusion results in recurrent hypotension. Unfortunately, randomized, blinded, placebo-controlled trials showing improvement in long-term outcomes such as mortality and length of stay are still lacking.

5/7/7
DIALOG(R)File 5:Biosis Previews(R)

17786410 BIOSIS NO.: 200400153071
%%%Hyperosmolar%%% solution effects in guinea pig airways. III. Studies on the identity of epithelium-derived relaxing factor in isolated perfused trachea using pharmacological agents.
AUTHOR: Fedan Jeffrey S (Reprint); Dowdy Janet A; Van Scott Michael R; Wu David X-Y; Johnston Richard A
AUTHOR ADDRESS: Health Effects Laboratory Division, National Institute for Occupational Safety and Health, 1095 Willowdale Rd., Morgantown, WV, 26505-2888, USA**USA
AUTHOR E-MAIL ADDRESS: jsf2@cdc.gov
JOURNAL: Journal of Pharmacology and Experimental Therapeutics 308 (1): p 30-36 January 2004 2004
MEDIUM: print
ISSN: 0022-3565 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: %%%Hyperosmolar%%% challenge of airway epithelium stimulates the release of epithelium-derived relaxing factor (EpDRF), but the identity of EpDRF is not known. We examined the effects of pharmacological agents on relaxant responses of methacholine (3 X 10-7 M)-contracted guinea pig perfused trachea to mucosal %%%hyperosmolar%%% challenge using D-mannitol. Responses were inhibited by gossypol (5 X 10-6 M), an agent with diverse actions, by the carbon monoxide (CO) scavenger %%%hemoglobin%%% (10-6 M), and by the heme oxygenase (HO) inhibitor zinc (II) protoporphyrin IX (10-4 M). The HO inhibitor chromium (III) mesoporphyrin IX (10-4 M) was not inhibitory, and the HO activator heme-L-lysinate (3 X 10-4 M) did not evoke relaxant responses. The CO donor tricarbonyldichlororuthenium (II) dimer (2.2 X 10-4 M) elicited small relaxation responses. Other agents without an effect on responses included: apyrase, adenosine, 6-anilino-5,8-quinolinequinone (LY83583), proadifen, (E)-3-(((3-(2-(7-chloro-2-quinolinyl)ethenyl)phenyl)((3-(dimethylamino)-3-oxopropyl)thio)methyl)thio)-propanoic acid (MK 571), diphenhydramine, glibenclamide, HgCl2, tetrodotoxin, nystatin, alpha-hemolysin, 8-bromoguanosine 3',5'-cyclic monophosphothioate, Rp-isomer, 12-O-tetradecanoylphorbol-13-acetate, cholera toxin, pertussis toxin, thapsigargin, nifedipine, Ca2+-free mucosal solution, hydrocortisone, and

epidermal growth factor. Cytoskeleton inhibitors, including erythro-9-(2-hydroxyl-3-nonyl)adenine, colchicine, nocodazole, latrunculin B, and cytochalasins B and D, had no effect on relaxation responses. The results suggest provisionally that a portion of EpDRF activity may be due to CO and that the release of EpDRF does not involve cytoskeletal reorganization.

5/7/8
DIALOG(R)File 5:Biosis Previews(R)

17632045 BIOSIS NO.: 200400002802
Diabetes in hospital needs more attention.
AUTHOR: Nagaraj J (Reprint); Bhattacharyya A (Reprint); Kavitha M (Reprint); Venugopal V (Reprint); Sunitha K (Reprint); Gayathri D (Reprint)
AUTHOR ADDRESS: Medicine, Manipal Hosptial, Bangalore, India**India
JOURNAL: Diabetes & Metabolism 29 (Hors serie 2): p4S404 August 2003 2003
MEDIUM: print
CONFERENCE/MEETING: 18th International Diabetes Federation Congress Paris, France August 24-29, 2003; 20030824
ISSN: 1262-3636
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

5/7/9
DIALOG(R)File 5:Biosis Previews(R)

17596325 BIOSIS NO.: 200300552756
Extreme hyperglycemia, 1556 mg/dl, unassociated with ketoacidosis or non-ketotic %%%hyperosmolar%%% coma.
AUTHOR: Sato Y; Komatsu M; Uehara Y; Aizawa T; Hashizume K
JOURNAL: Journal of the Japan Diabetes Society 46 (6): p437-440 2003 2003
MEDIUM: print
ISSN: 0021-437X
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: Japanese

5/7/10
DIALOG(R)File 5:Biosis Previews(R)

17562648 BIOSIS NO.: 200300518011
Effects of %%%hyperosmolar%%% ionic and low osmolar non-ionic contrast media on coagulation times and some blood parameters in dogs: An in vivo study.
AUTHOR: Izci C; Ogurtan Z; Ceylan C (Reprint)
AUTHOR ADDRESS: Department of Surgery and Radiology, College of Veterinary Medicine, University of Selcuk, Konya, Turkey**Turkey
AUTHOR E-MAIL ADDRESS: cizci@selcuk.edu.tr
JOURNAL: Journal of Veterinary Medicine Series A 50 (6): p307-312 August 2003 2003

MEDIUM: print
ISSN: 0931-184X _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The purpose of this study is to evaluate the effects of %%%hyperosmolar%%% ionic contrast media (CM) (diatzioate) and low osmolar non-ionic CM (iohexol and ioxilan) on coagulation time and some blood parameters in dogs in vivo. The animals were divided into three groups in equal numbers. The dogs in groups I, II and III received diatrizoate, iohexol and ioxilan at the dose of 700 mgI/kg intravenously (IV) as a bolus, respectively. Administration of contrast media and blood samples were collected from vena cephalica antebrachii prior to CM administration and thereafter at 3, 15, 30, 60, 90 and 180 min and 24 h to measure the coagulation factors (activated partial thromboplastin time (APTT), prothorombin time (PT), fibrinogen and fibrinogen degradation products) and some other blood parameters (red blood cells, platelet, white blood cells, haematocrit (Ht) and haemoglobin (Hb)). While a statistically significant decrease was observed on APTT at 15 min in group III, no significant differences were found in groups I and II. All the groups had insignificant alterations for PT, fibrinogen and fibrinogen degradation product, following CM administration. Significant decreases were observed for platelet at 3 min in all groups. This decrease was also significant at 15- and 30- min intervals in group I. There were significant decreases for erythrocytes, Ht and Hb measurements within 30 min, and no significant alterations were observed for leucocytes within 60 min in all groups compared with baseline values. No differences were observed with regard to coagulation times and some blood parameters as far as long-lasting and major effects of each CM are concerned.

5/7/11
DIALOG(R)File . 5:Biosis Previews(R)

16722996 BIOSIS NO.: 200200316507
Influence of hyperosmotic shrinkage and beta-adrenergic stimulation on red blood cell volume regulation and oxygen binding properties in rainbow trout and carp
AUTHOR: Brauner C J; Wang T; Jensen F B (Reprint)
AUTHOR ADDRESS: Centre for Respiratory Adaptation, Institute of Biology, SDU, Odense University, Campusvej 55, DK-5230, Odense M, Denmark**Denmark
JOURNAL: Journal of Comparative Physiology B Biochemical Systemic and Environmental Physiology 172 (3): p251-262 April, 2002 2002
MEDIUM: print
ISSN: 0174-1578
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Whole blood from rainbow trout and carp was subjected to hyperosmotic shock and subsequent beta-adrenergic stimulation (isoprenaline) at different oxygen tension (PO2) and carbon dioxide tension (PCO2) levels with the aim to evaluate changes in red blood cell (RBC) volume, pH and ion concentrations and their ultimate effect on blood O2 transport characteristics. %%%Hyperosmolality%%% (addition of

NaCl) induced RBC shrinkage, which was followed by a regulatory volume increase (RVI) that was larger at low than at high PO2 and more complete in carp than in trout. Carp RBC showed practically full volume recovery within 140 min at low PO2 and partial recovery at high PO2, whereas RVI was partial under all PO2 and PCO2 conditions in trout. The RVI increased intracellular (Na+), water content, and, in carp, also pH (pHi), suggesting activation of Na+/H+ exchange. In trout RBCs, activation of RVI was rapid but succeeded by deactivation. In carp RBCs, activation of Na+ influx was slower but it continued, allowing full volume recovery. Shrinkage of the RBCs was associated with only minor decreases in blood oxygen saturation and oxygen affinity in both species. Thus, the oxygen affinity decrease expected on the basis of the increased concentration of intracellular haemoglobin and organic phosphates was small, and it appeared to some extent countered during RVI by an oxygen affinity increase via increased pHi. Addition of isoprenaline increased RBC volume and pHi and increased Hb oxygen saturation. The beta-adrenergic response was stronger at low compared to high PO2 and at high compared to low PCO2. The PO2 dependency was largest in carp, whereas the PCO2 (pH) dependency was more expressed in trout. The adrenergic response of trout RBCs was similar under isoosmotic and hyperosmotic conditions. In carp RBCs, the response was absent at high PO2 under isoosmotic conditions, but interestingly it could be induced under hyperosmotic conditions. The data suggest that the RBC shrinkage occurring in fish moving from freshwater to seawater has minimal impact on blood O2 binding properties.

5/7/12
DIALOG(R)File 5:Biosis Previews(R)

16705784 BIOSIS NO.: 200200299295
Acute renal failure and rhabdomyolysis in a young patient with newly diagnosed diabetes and %%%hyperosmolar%%% non-ketotic coma
AUTHOR: Whittier F C (Reprint); Sharma R (Reprint); Lara L (Reprint)
AUTHOR ADDRESS: Northeastern Ohio Universities College of Medicine, Affiliated Hospitals at Canton, Canton, OH, USA**USA
JOURNAL: Journal of the American Society of Nephrology 12 (Program and Abstract Issue): p185A-186A September, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: ASN (American Society of Nephrology)/ISN (International Society of Nephrology) World Congress of Nephrology San Francisco, CA, USA October 10-17, 2001; 20011010
SPONSOR: American Society of Nephrology
International Society of Nephrology
ISSN: 1046-6673
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

5/7/13
DIALOG(R)File 5:Biosis Previews(R)

16536254 BIOSIS NO.: 200200129765
p38 MAP kinase regulates both differentiation and apoptosis in primary human erythroid cells

AUTHOR: Somervaille Tim C P (Reprint); Linch David C (Reprint); Khwaja Asim (Reprint)
AUTHOR ADDRESS: Haematology, Royal Free and University College Medical School, London, UK**UK
JOURNAL: Blood 98 (11 Part 1): p78a-79a November 16, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 43rd Annual Meeting of the American Society of Hematology, Part 1 Orlando, Florida, USA December 07-11, 2001; 20011207
SPONSOR: American Society of Hematology
ISSN: 0006-4971
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Activation of p38 MAP kinase has been reported to be essential for erythroid differentiation and apoptosis induction of certain cell lines. Using primary human erythroid cells expanded in lineage specific liquid culture from CD34+ selected PBSCs, we have studied this further. Typically, CFU-Es and proerythroblasts are generated by day 6-7 of the culture. To assess the effect of blockade of p38 activity on erythroid differentiation, the p38 specific inhibitor SB203580 (20uM) was added to cultures on day 4 when expression of the erythroid lineage markers CD36, Glycophorin A, E-cadherin and Haemoglobin A is low. Following incubation for 48 hours with either DMSO (control) or SB203580, fold proliferation was 4.3+/-0.8 and 3.7+/-0.9 respectively (mean+/-SEM; p=0.06, n=8). Viability was unaffected. In 4 experiments the percentage of cells expressing E-cadherin increased from 21+/-7% to 65+/-12% over 48 hours in the control condition, but only to 49+/-16% in the SB203580 condition (p=0.04). There was no significant difference in the increase in the percentage of cells expressing Glycophorin A, Haemoglobin A or CD36. However, when the intensity of expression of these markers in positive cells was examined, both E-cadherin and CD36 expression, but not Glycophorin A or Haemoglobin A, was significantly lower than controls (33+/-5% lower for E-cadherin; n=3; p=0.02 and 41+/-4% lower for CD36; n=3; p=0.01). Incubation of erythroid progenitors for 4-6 days from day 6-9 of culture with SB203580 did not significantly alter terminal morphological erythroid differentiation. Furthermore, CD34+ cells infected with a bicistronic retroviral vector (MSCV-IRES-GFP) containing a kinase inactive p38 mutant also underwent morphological erythroid differentiation. These data suggest a more subtle role for p38 activity in human erythroid differentiation than previously suggested by studies with erythroid cell lines. Using phosphospecific antibodies that detect only the T180/T182 phosphorylated active form of p38, p38 activity was assessed in cultured erythroblasts. Consistent with a role in differentiation signalling, cells lysed directly from culture (DFC) showed low to intermediate levels of p38 activity. This reduced slightly after growth factor withdrawal for 1 hour and then increased following re-exposure of these cells to either Epo or SCF (1.9+/-0.2 and 1.6+/-0.4 fold increase respectively at 15 minutes, as assessed by densitometry (n=5)). Cells that were growth factor deprived over a prolonged 6-8 hour timecourse exhibited levels of p38 activity substantially above those seen in cells lysed DFC (6-15 fold), and this rise in activity correlated with the onset of apoptosis of a proportion of the cells. The rise was not prevented by inhibitors of caspase activity and was equivalent in level to that obtained by treating cells with heat or %%%hyperosmolar%%% shock. Evidence that p38 may contribute in part to apoptosis induction was obtained by incubating growth factor deprived erythroblasts with

SB203580. After 8 hours 45+/-6% were apoptotic, as determined by annexin V binding, compared with 17+/-4% of growth factor replete cells. Of cells treated with SB203580 but no growth factors, 36+/-6% were apoptotic (n=13) representing a mean 30% reduction in the proportion of cells undergoing apoptosis due to growth factor withdrawal (p=0.001). Taken together these results suggest that p38 has a dual role in erythopoiesis with low level activity contributing to certain aspects of erythroid differentiation, including up-regulation of E-cadherin and CD36 expression, with higher levels of p38 activity contributing to apoptosis induction.

5/7/14
DIALOG(R)File 5:Biosis Previews(R)

16337121 BIOSIS NO.: 200100508960
Administration of %%%hemoglobin%%% to rat brain by disruption of the blood-brain barrier
AUTHOR: Yan D (Reprint); Panter S S (Reprint)
AUTHOR ADDRESS: Neurosurgery, University of California, San Francisco, CA, USA**USA
JOURNAL: Society for Neuroscience Abstracts 27 (1): p567 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 31st Annual Meeting of the Society for Neuroscience San Diego, California, USA November 10-15, 2001; 20011110
ISSN: 0190-5295
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Previous studies, primarily in cell culture, have suggested that %%%hemoglobin%%% might have neurotoxic properties. To assess this possibility in vivo, we disrupted the blood-brain barrier (BBB) in the presence of cell-free %%%hemoglobin%%% circulating in the vasculature. The BBB of male, Sprague-Dawley rats was disrupted by intracarotid injection of %%%hyperosmolar%%% mannitol, and the %%%hemoglobin%%% (crosslinked between the alpha subunits with bis (3,5-dibromosalicyl fumarate)-DBBFHb) was injected via femoral vein 10 minutes before BBB disruption. The expression of stress-protein heme oxygenase-1 (HO-1), cellular-injury protein heat shock protein 70 (HSP70), and inflammatory cytokine interleukin-10 (IL-10) were determined by immunocytochemistry in the brains of animals sacrificed 6 and 24 hours after BBB disruption. Neuronal injury was evaluated by Nissl staining. The results showed that the expression of HO-1 and HSP70 in the ipsilateral hemisphere were remarkably increased 6 hours after BBB disruption in the presence of Hb but were not present 24 hours after disruption. Conversely, the expression of IL-10 was decreased in the ipsilateral hemisphere at 24, but not at 6 hours. Nissl staining demonstrated a more severe injury to neurons at 24 hours than that at 6. All of these differences were observed in cortex. These data indicate that direct administration of %%%hemoglobin%%% to the brain can cause cellular stress and injury and affect the inflammatory response, implying that %%%hemoglobin%%% may have direct neurotoxic effects following traumatic or hemorrhagic injury.

5/7/15

DIALOG(R)File 5:Biosis Previews(R)

16087631 BIOSIS NO.: 200100259470
Postmortem diagnosis of unsuspected diabetes mellitus established by determination of decedent's %%%hemoglobin%%% A1c level
AUTHOR: Khuu Hanh M; Robinson C Andrew; Brissie Robert M; Konrad Robert J (Reprint)
AUTHOR ADDRESS: Department of Pathology, Division of Laboratory Medicine, University of Alabama at Birmingham, 619 South 19th Street, P230 West Pavilion, Birmingham, AL, 35233-7331, USA**USA
JOURNAL: Journal of Forensic Sciences 44 (3): p643-646 May, 1999 1999
MEDIUM: print
ISSN: 0022-1198
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Although approximately 15.7 million Americans have diabetes mellitus, with the vast majority having type 2 diabetes, it is estimated that as many as 5.4 million are undiagnosed. The present case illustrates that undiagnosed diabetes can be a factor in otherwise unexplained deaths. A 39-year-old white male with no significant past medical history other than alcohol abuse was found deceased at his residence. The manner of death appeared to be natural, but no anatomic cause was found. Toxicological analysis revealed a blood ethanol level of 0.02 g/dL and was negative for drugs of abuse. Analysis of the vitreous fluid revealed a glucose level of 502 mg/dL. The blood glucose level was 499 mg/dL, and the %%%hemoglobin%%% A1c (HbA1c) level was 10.6%. Only trace urine ketones were detected, suggesting that the death was the result of hyperglycemic %%%hyperosmolar%%% non-ketosis (HHNK) from unsuspected diabetes. The postmortem HbA1c value serves as a definitive indicator of prolonged hyperglycemia. In order to aid the interpretation of the clinical data, this case is discussed in conjunction with a similar case of a known diabetic patient.

5/7/16
DIALOG(R)File 5:Biosis Previews(R)

15047599 BIOSIS NO.: 199900307259
Plasma volume changes during and after acute variations of body hydration level in humans
AUTHOR: Jimenez C (Reprint); Melin B; Koulmann N; Allevard A M; Launay J C; Savourey G
AUTHOR ADDRESS: Centre de Recherches du Service de Sante des Armees "Emile Parde", Unite de Bioenergetique et Environnement, 24 avenue des Maquis du Gresivaudan, F-38702, La Tronche Cedex, France**France
JOURNAL: European Journal of Applied Physiology and Occupational Physiology 80 (1): p1-8 June, 1999 1999
MEDIUM: print
ISSN: 0301-5548
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: This study examined plasma volume changes (DELTAPV) in humans during periods with or without changes in body hydration: exercise-induced dehydration, heat-induced dehydration and glycerol hyperhydration. Repeated measurements of plasma volume were made after two injections of Evans blue. Results were compared to DELTAPV calculated from haematocrit (Hct) and blood haemoglobin concentration ((Hb)). Eight well-trained men completed four trials in randomized order: euhydration (control test C), 2.8% dehydration of body mass by passive controlled hyperthermia (D) and by treadmill exercise (60% of their maximal oxygen uptake, VO2max) (E), and hyperhydration (H) by glycerol ingestion. The Hct, (Hb), plasma protein concentrations and plasma osmolality were measured before, during and after the changes in body hydration. Different Hct and (Hb) reference values were obtained to allow for posture-induced variations between and during trials. The DELTAPV values calculated after two Evans blue injections were in good agreement with DELTAPV calculated from Hct and (Hb). Compared to the control test, mean plasma volume declined markedly during heat-induced dehydration (-11.4 (SEM 1.7)%) and slightly during exercise-induced dehydration (-4.2 (SEM 0.9)%) ($P < 0.001$ compared to D), although %%%hyperosmolality%%% was similar in these two trials. Conversely, glycerol hyperhydration induced an increase in plasma volume (+ 7.5 (SEM 1.0)%). These results would indicate that, for a given level of dehydration, plasma volume is dramatically decreased during and after heat exposure, while it is better maintained during and after exercise.

5/7/17
DIALOG(R)File 5:Biosis Previews(R)

13750175 BIOSIS NO.: 199799384235
Sodium hypochlorite in diabetic ketoacidotic coma
AUTHOR: Shilova N A; Bitsunov N S; Murdasova I V
AUTHOR ADDRESS: Dep. Anesthesiol. Resusc., I.M. Sechenov Mosc. Med. Acad., Moscow, Russia**Russia
JOURNAL: Anesteziologiya i Reanimatologiya 0 (4): p81-83 1996 1996
ISSN: 0201-7563
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: Russian

5/7/18
DIALOG(R)File 5:Biosis Previews(R)

12392494 BIOSIS NO.: 199497413779
Chloride and inorganic phosphate modulate binding of oxygen to bovine red blood cells
AUTHOR: Gustin P (Reprint); Detry B; Cao M L; Chenut F; Robert A; Ansay M; Frans A; Clerbaux T
AUTHOR ADDRESS: Dep. Pharmacol. Toxicol.1, Fac. Vet. Med., Univ. Liege, Bd de Colonster B41, B-4000 Liege, Belgium**Belgium
JOURNAL: Journal of Applied Physiology 77 (1): p202-208 1994 1994
ISSN: 8750-7587
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: The influence of P-i and Cl on the equilibrium of Oxygen binding to bovine red blood cells was assessed by plotting the whole blood oxygen dissociation curve measured under standard conditions with and without added KCl and K-2HPO-4. Both salts shifted the oxygen dissociation curve to the right. This effect was more marked at the highest saturation levels. At a given saturation level, the anion-induced shift was linearly related to the concentration of salt added to the blood. Cl had a greater effect than P-i. The relationship between changes in PO-2 at 50% %%%hemoglobin%%% saturation (in Torr) and concentrations of ions added (in mmol/l) was equal to 0.0515(Cl) + 0.0302(P-i) (r-2 = 0.94; P lt 0.001). These changes were not due to the %%%hyperosmolality%%% induced by salt addition, since sucrose added in place of salts was without effect on the measured parameters. The oxygen exchange fraction expressed as percentage of saturation, i.e., the difference in %%%hemoglobin%%% saturation when PO-2 decreases from 130 to 40 Torr, was linearly correlated to added anion concentration (in mmol/l) (=0.102(Cl) + 0.059(P-i) (r-2 = 0.95; P lt 0.00 1)). No significant interaction between the anions was observed; their effects were purely additive. This original mechanism of controlling the oxygen affinity of bovine blood may have clinical relevance: Cl and P-i could be used to increase oxygen transport efficiency in hypoxic animals.

5/7/19
DIALOG(R)File 5:Biosis Previews(R)

12172353 BIOSIS NO.: 199497193638
Abnormal coagulation profile in brain tumor patients during surgery
AUTHOR: Iberti Thomas J; Miller Myron (Reprint); Abalos Amy; Fischer Ellen P; Post Kalmon D; Benjamin Ernest; Oropello John M; Wiltshire-Clement Michelle; Rand Jacob H
AUTHOR ADDRESS: Mt. Sinai Med. Cent., Dep. Geriatrics Adult Dev., Box 1070, One Gustave Levy Place, New York, NY 10029-6574, USA**USA
JOURNAL: Neurosurgery (Baltimore) 34 (3): p389-395 1994 1994
ISSN: 0148-396X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Neurosurgical patients are at high risk for the development of thrombosis and thromboembolism. We compared the perioperative clotting factor and coagulation parameters of 20 patients undergoing elective craniotomy for brain tumors to those of 20 patients undergoing elective abdominal surgery. We also measured the levels of plasma arginine vasopressin to determine if changes in this hormone might be associated with changes in clotting factors, activated partial thromboplastin times, or bleeding times. The results demonstrated a significant reduction in partial thromboplastin times and bleeding times in the neurosurgery group, which began at the initiation of surgery and lasted to the end of the study (12 h postoperatively). Elevations in factor assays and plasma arginine vasopressin occurred in both groups during surgery, but there were no differences between the neurosurgical and abdominal surgical patients, except with Factor IX levels, which were elevated only in the neurosurgical patients. Serum osmolality and %%%hemoglobin%%% levels were

significantly higher in the neurosurgical cohort. These results suggest that there are hemostatic differences between neurosurgical patients with brain tumors and abdominal surgery patients that cannot be explained solely by elevations in plasma arginine vasopressin or the clotting factors measured; these differences may be the consequence of perioperative variables such as dehydration and %%%hyperosmolality%%%.

5/7/20
DIALOG(R)File 5:Biosis Previews(R)

11933840 BIOSIS NO.: 199396098256
The effect of acarbose on the intestinal metabolism of glucose in vitro
AUTHOR: Gomez-Zubeldia M A (Reprint); Ropero F; Sanchez-Casas P; Tormo M A; Blazquez E; Campillo J E
AUTHOR ADDRESS: Dep. Fisiologia, Fac. Med., Avda. Elvas s/n, 06071 Badajoz, Spain**Spain
JOURNAL: Acta Diabetologica 30 (2): p85-88 1993
ISSN: 0940-5429
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The effect of acarbose on the intestinal metabolism of glucose was investigated using an in vitro perfused preparation of the isolated rat small intestine-pancreas. In preparations perfused without intraluminal sucrose administration, the total glucose recovered in the portal effluent and the portal values of lactate, pyruvate and alanine did not depend on whether or not acarbose (1.5 mg/kg body weight (b.w.)) was present in the intestinal lumen. The intestinal glucose and lactate contents were very low at the end of the experiment, and identical with or without acarbose. Insulin and glucagon concentrations remained constant during the whole perfusion period. After intraluminal administration of sucrose a clear increase in portal glucose concentration was observed, which was severely reduced by acarbose administration; no changes in portal levels of lactate, pyruvate, alanine, insulin and glucagon were observed. The intestinal content of sucrose at the end of the study was significantly higher in the presence of acarbose (1.5 mg/kg b.w.), while the glucose concentration was low both with and without acarbose (0.20 +- 0.08 vs 0.29 +- 0.09 mmol/l respectively). These results suggest that acarbose does not influence the metabolic utilization of the glucose being translocated from the lumen.

5/7/21
DIALOG(R)File 5:Biosis Previews(R)

11786646 BIOSIS NO.: 199395088912
Fetal %%%hemoglobin%%% induction with butyric acid: Efficacy and toxicity
AUTHOR: Blau C Anthony (Reprint); Constantoulakis Pantelis; Shaw C M; Stamatoyannopoulos G
AUTHOR ADDRESS: RG-25, Health Sciences Bldg., Univ. Wash. Med. Cent., Seattle, WA 98195, USA**USA
JOURNAL: Blood 81 (2): p529-537 1993
ISSN: 0006-4971

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Butyric acid induces fetal %%%hemoglobin%%% (HbF), a property of potential therapeutic advantage in patients with disorders of globin chain synthesis. We performed dose escalation studies of this compound in baboons to assess whether clinically significant increases in HbF are achievable, and to define the associated toxicities. Additionally, the effect of butyrate in combination with erythropoietin on HbF induction was assessed. HbF induction in response to butyrate was dependent on the dose and duration of treatment. Doses of butyrate less than 4 g/kg/d were associated with minimal toxicity (hypokalemia) and significant HbF induction in these nonanemic animals, with 1 g/kg/d producing an increase in HbF-containing reticulocytes (F reticulocytes) from 0.9% to 8.7% and an increase in HbF from 0.8% to 1.4%. A dose of 2 g/kg/d resulted in an increase in F reticulocytes from 2.1% to 27.8% and an increase in HbF from 0.7% to 2.2%. Doses of 4 g/kg/d in another animal produced an increase in F reticulocytes from 1% to 21.6% and in HbF from 1.9% to 5.3%. Infusions in excess of 4 g/kg/d were complicated (after a variable amount of time) by a decreased level of alertness (caused by %%%hyperosmolality%%% or butyrate itself) and hematologic toxicity (with declines in reticulocyte, white blood cell, and platelet counts). Prolonged infusions of high doses of butyrate (8 to 10 g/kg/d) were associated with peak F reticulocyte percentages reaching 38% to 64.5% and HbF reaching levels in excess of 20%. These high doses (8 to 10 g/kg/d) were complicated in two animals with a striking and unique neuropathologic picture and, in one animal, multiorgan system failure. Erythropoietin in combination with butyrate, induced F reticulocytosis in an additive manner. We conclude that butyric acid is a strong inducer of HbF, particularly when administered in combination with erythropoietin. As chronic toxicities remain undefined, patients in future clinical trials of this and similar compounds should be monitored closely for evidence of neurologic toxicity.

5/7/22
DIALOG(R)File 5:Biosis Previews(R)

11465010 BIOSIS NO.: 199344027906
Cerebral changes in cytochrome aa-3 as an indicator of bilirubin uncoupling of oxidative phosphorylation
AUTHOR: Wu Paul Y K (Reprint); Jobsis Frans F; Sylvia Avis L
AUTHOR ADDRESS: Dep. Peds., Univ. So. Calif., Los Angeles, Calif, USA**USA
JOURNAL: Pediatric Research 32 (5): p612 1992
CONFERENCE/MEETING: Annual Meeting of the European Society for Pediatric Research, Uppsala, Sweden, June 14-17, 1992. PEDIATR RES
ISSN: 0031-3998
DOCUMENT TYPE: Article; Meeting
RECORD TYPE: Citation
LANGUAGE: English

5/7/23
DIALOG(R)File 5:Biosis Previews(R)

11415360 BIOSIS NO.: 199294117201
METABOLIC VASODILATATION WITH GLUCOSE-INSULIN-POTASSIUM DOES NOT CHANGE THE HETEROGENEOUS DISTRIBUTION OF CORONARY BLOOD FLOW IN THE DOG
AUTHOR: GROENEVELD A B J (Reprint); VAN LAMBALGEN A A; VAN DEN BOS G C; NAUTA J J P; THIJS L G
AUTHOR ADDRESS: DEP INTERN MED, ACADEMIC HOSPITAL OF THE FREE UNIVERSITY, DE BOELELAAN 1117, 1081 HV AMSTERDAM, NETHERLANDS**NETHERLANDS
JOURNAL: Cardiovascular Research 26 (8): p757-764 1992
ISSN: 0008-6363
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Objective: The heterogeneous distribution of coronary blood flow could represent regional differences in demand, or mismatching of regional O2 supply to demand, caused by regionally exhausted vasodilatation (anatomical/mechanical factors) or by regional arteriovenous diffusional O2 shunting. Regional coronary blood flow and global myocardial oxygenation and metabolism were measured during metabolic vasodilatation with glucose-insulin-potassium (GIK). Methods: Variables were studied before and 30 and 60 min after start of a 30 min infusion of GIK (50% glucose, 4 ml .cntdot. kg-1, 8 mM KCl, and 3 U insulin-kg-1). Regional blood flows were measured by radioactive microsphere technique and cardiac output by thermodilution. Experimental subjects were six anaesthetised mongrel dogs, weighting 20-27 kg. Results: GIK increased plasma osmolarity and lactate, decreased haemoglobin, and increased cardiac output by 67(29)% and systemic O2 supply by 32(13)%, at unchanged arterial and central venous pressures and heart rate. Coronary blood flow rose by 97(50)% and left ventricular O2 supply by 56(41)%. Although regional blood flows in small tissue samples of about 1 g in the left ventricle ranged from a factor 0.31 to 1.73 of mean flow, GIK did not change flow heterogeneity and regional flows significantly correlated in time. Left ventricular O2 uptake rose by 42(40)%, while venous PO2 increased and O2 extraction decreased. Global lactate uptake increased at unchanged extraction. Changes were reversed after GIK. Conclusions: GIK transiently increases myocardial O2 uptake following a raised cardiac output, caused by a %%%hyperosmolarity%%% induced rise in cardiac contractility rather than by haemodilution. Although myocardial O2 supply is distributed heterogeneously, the fractional rise with GIK is almost equal among regions. At constant lactate extraction, increased venous PO2 and decreased O2 extraction do not indicate overperfusion in some regions at the cost of underperfusion in others, are probably caused by a small, direct vasodilating effect of %%%hyperosmolarity%%%, and argue against diffusional O2 shunting. As for global O2 supply to demand, the increase in regional O2 supply is probably well adapted to regionally increased demand during GIK, so that the heterogeneous distribution of O2 supply can be explained by regional differences in demand and not by regionally exhausted vasodilation or O2 shunting.

11170765 BIOSIS NO.: 199293013656

EFFECTS OF ISCHAEMIA-RELATED SUSPENSION MEDIA AND PORE SIZE ON ERYTHROCYTE FILTERABILITY IN PERIPHERAL ARTERIAL OCCLUSIVE DISEASE
AUTHOR: SCHEFFLER A (Reprint); STEINBACH U; RIEGER H
AUTHOR ADDRESS: CLINIC VASCULAR DISEASES, D-5250 ENGELSKIRCHEN, GER** GERMANY
JOURNAL: Clinical Hemorheology 11 (5): p479-496 1991
ISSN: 0271-5198
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Whether erythrocyte deformability is reduced in patients with peripheral occlusive arterial disease (POAD) is discussed controversially. Within this study erythrocyte filterability through microfilters with different pore diameters (3, 5, and 8 .mu.m) was investigated in patients with POAD and age-matched healthy volunteers under physiological and ischaemia-related boundary conditions (lactate acidosis, hypercapnia, hypoxia, %%%hyperosmolarity%%%). 70 subjects were assigned to two control and three POAD groups characterized by varying combinations of risk factors (smoking, diabetes mellitus). Red blood cells (RBC) were suspended in four different media (pH/mosmol * l-1: 7.4/300, 7.4/400, 6.5/300, 6.5/400) containing a physiological bicarbonate buffer adequately gased with O2/CO2/N2. Mean hematocrit-corrected relative erythrocyte transit times (RCTT) and concentrations of clogging particles (CP) were measured by means of the St. George's Filtrometer. In agreement with previous reports, filtration data varied within erythrocyte volume (MCV) and mean corpuscular %%%hemoglobin%%% concentration (MCHC) used as estimates of surface area-to-volume ratio (SAVR) and inner viscosity (IV) of RBC, respectively. While RBC filtration rates were dominated by IV in 5 and 8 .mu.m spores they were mainly limited by SAVR in 3 .mu.m pores. For RCTT statistically significant differences between controls and POAD patients could not be found. CP correlated with leucocyte counts of the suspensions if filterability was not primarily limited by MCV. A quantitative agreement among these parameters, however, was only obtained in 8 .mu.m pores and, therefore, interactions between both erythrocytes themselves and erythrocytes and leucocytes should have contributed to filter obstruction. For CP statistically significant differences were only found between controls and diabetic POAD patients in whom also higher leucocyte counts were registered. It is concluded that in clinical or pharmacological studies of RBC filterability the most important in-vitro boundary conditions (milieu, filter pore size) should be varied in order to account for the complex and partially antagonistical relationships between erythrocyte properties and pore geometry as well as blood cell interactions. Because the capillary morphology of ischemic tissue areas is usually not known or may be subjected to dynamic alterations the meaning of the in vitro filterability with respect to the in vivo microcirculation is additionally insecured.

09753785 BIOSIS NO.: 198988068900
RETENTION OF RADIOLEAD BY HUMAN ERYTHROCYTES IN-VITRO
AUTHOR: BARTON J C (Reprint)

AUTHOR ADDRESS: VETERANS ADM MED CENT, BIRMINGHAM, ALA, USA**USA
JOURNAL: Toxicology and Applied Pharmacology 99 (2): p314-322 1989
ISSN: 0041-008X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: An in vitro method was developed to assess human erythrocyte lead uptake and release directly, rapidly, and reproducibly; the technique requires small aliquots of blood and uses silicone fluid to separate erythrocytes from their suspending media. Uptake occurred rapidly and was directly related to temperature. Increasing quantities of available elemental lead were associated with increasing absolute quantities but decreasing percentages of uptake. Low values of pH diminished the uptake and enhanced the release of radiolead by erythrocytes, and could be correlated with diminished lead-%%%hemoglobin%%% binding. para-Chloromecuribenzoate increased and dithiothreitol inhibited radiolead uptake but neither compound affected lead release, suggesting that sulfhydryl groups are important for lead binding to the erythrocyte. Cyanamide and N-ethylmaleimide did not significantly affect the net uptake or release of radiolead. Calcium disodium EDTA, penicillamine, and dimercaprol significantly reduced lead uptake, although only incubation with dimercaprol resulted in a net removal of lead from erythrocytes. Iron and ceruloplasmin significantly decreased radiolead uptake, but inorganic metal cations other than iron, %%%hyperosmolarity%%%, human serum albumin, cholesterol, and transferin had no significant effect on uptake or release.

5/7/26

09602912 BIOSIS NO.: 198987050803
ROLE OF HYPOVOLEMIC HEMOCONCENTRATION IN DOSE-DEPENDENT FLOW DECLINE OBSERVED IN MURINE TUMORS AFTER INTRAPERITONEAL ADMINISTRATION OF GLUCOSE OR MANNITOL
AUTHOR: VAUPEL P W (Reprint); OKUNIEFF P G
AUTHOR ADDRESS: DEP RADIATION MED, MASS GEN HOSP, HARVARD MED SCH, BOSTON, MASS 02114, USA**USA
JOURNAL: Cancer Research 48 (24 PART 1): p7102-7106 1988
ISSN: 0008-5472
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Responses of tumor microcirculation (RBC flux) to i.p. glucose or mannitol injections were studied in early generation isotransplants of a spontaneous C3Hf/Sed mouse fibrosarcoma (FSaII). RBC flux in superficial tumor microregions was assessed using laser Doppler flowmetry. After administration of glucose or mannitol (a nonmetabolized sugar alcohol), a dose-dependent reduction in laser Doppler flow, and a dose-dependent increase in systemic hematocrit occurred concurrently. Maximum flow reductions induced by i.p. glucose or mannitol were statistically indistinguishable for equal osmotic load. Maximum decreases in RBC flux for glucose or mannitol were 20 and 25% (1.25 mg/g i.p.), 42 and 48% (2.5 mg/g i.p.), 72 and 60% (5 mg/g i.p.), and 80 and 75% (10 mg/g i.p.),

respectively. Maximum increases in systemic hematocrit ranged from 18% (1.25 mg/g glucose i.p.) to 33% (10 mg/g glucose i.p.). Examination of RBC count, blood %%%hemoglobin%%% concentration, and fluid accumulation in the abdominal cavity after glucose or mannitol administration were all compatible with a significant shift of intravascular/extracellular water into the abdominal cavity with resultant systemic hypovolemic hemoconcentration. RBC volume and mean %%%hemoglobin%%% content of RBC remained unchanged with glucose loading. The data suggest that reductions in laser Doppler flow are predominantly caused by hypovolemic hemoconcentration following i.p. administration of %%%hyperosmolar%%% sugar solutions. Changes in laser Doppler flow due to specific glucose-mediated or glucose-related phenomena are probably of minor importance in the murine tumor system investigated. Future studies on murine tumors, examining for specific effects of glucose on metabolism and/or therapy, should not use i.p. administration of %%%hyperosmolar%%% solutions.

5/7/27
DIALOG(R)File 5:Biosis Previews(R)

07774622 BIOSIS NO.: 198580083517
HEMODILUTION DURING STANDARDIZED HEMORRHAGE IN HIGH-ALTITUDE ACCLIMATIZED RATS
AUTHOR: CHERDRUNGSI P (Reprint)
AUTHOR ADDRESS: DEP OF PHYSIOLOGY, FACULTY OF SCIENCE, MAHIDOL UNIV, RAMA VI RD, BANGKOK 10400, THAILAND**THAILAND
JOURNAL: Aviation Space and Environmental Medicine 56 (5): p431-435 1985
ISSN: 0095-6562
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Ten controls rats and 16 high-altitude acclimatized rats were bled at sea level into a reservoir which maintained arterial pressure at 35 mm Hg. As soon as the animals had spontaneously taken back 30% of the maximum bleeding volume, all the shed blood remaining in the reservoir was reinfused. Hemodilution was studied during the 1st half phase of hypotension starting from the point of initial blood withdrawal and ending at the point of maximum blood loss. Changes in hematocrit, Hb content, total plasma protein and arterial plasma osmolality were measured. The initial and the maximum blood withdrawal, the oligemic time, and the survival time of the altitude-acclimatized rats were all greater than those for nonacclimatized rats. The higher tolerance to standardized hemorrhagic shock in altitude-exposed rats seemed to be due in part to their more marked hemodilution which allowed more efficient homeostatic regulation of vascular volume. The difference in rate of hemodilution between the 2 animal groups could not be attributed to arterial %%%hyperosmolality%%%.

5/7/28
DIALOG(R)File 5:Biosis Previews(R)

0001389310 BIOSIS NO.: 19644500010496

Effect of mean corpuscular %%%hemoglobin%%% concentration on viscosity
AUTHOR: ERSLEV ALLAN J; ATWATER JEAN
AUTHOR ADDRESS: Jefferson Med. Coll., Philadelphia, Pa., USA
JOURNAL: JOUR LAB AND CLIN MED 62 ((3)): p401-406 1963 1963
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: The relative viscosity of whole blood at hematocrits above 30 per cent depends primarily on the intracellular viscosity of the individual red blood cells. In this study, an exponential relationship was found between relative viscosity of whole blood and mean corpuscular %%%hemoglobin%%% concentration. At MCHC of more than 34 per cent (either naturally occurring or induced by means of %%%hyperosmolarity%%%) there was a steep increase in the relative viscosity, indicating that the tighter packing of %%%hemoglobin%%% molecules in the red cells resulted in an increased intracellular viscosity. Since MCHC higher than 34 to 35 per cent is almost exclusively found in patients with hereditary spherocytosis, it is suggested that in this disorder the increased rigidity, in addition to the spheric shape, of the red cells may be of importance for their capillary transit and splenic sequestration. It is further suggested that plasma-skimming in the kidneys may be necessary in order to reduce hematocrit and viscosity in the hyper-osmolar medullary vessels. ABSTRACT AUTHORS: Authors

5/7/29

0001388908 BIOSIS NO.: 19644500010094
Small intestinal blood flow
AUTHOR: TEXTER E CLINTON
AUTHOR ADDRESS: NW. Univ. Med. Sch., Chicago, Ill., USA
JOURNAL: AMER JOUR DIGEST DIS 8 ((7)): p587-613 1963 1963
CONFERENCE/MEETING: Symposium on visceral blood flow
DOCUMENT TYPE: Meeting
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: The circulatory dynamics of the superior mesenteric bed have received relatively little attention until recently, largely because of difficulties in measurement. Much of the available information has been obtained from studies on dogs. The blood supply to the small intestine is furnished by the superior mesenteric artery. Approximately 80% of hepatic blood flow is supplied by the portal vein. An extensive microcirculation is present enabling shifts in blood to or away from the mucosa by preferential channels. Superior mesenteric artery flow in the dog varies between 170 and 448 ml/min. and is approximately 2-3 times the flow to one renal artery. The hemodynamic functions of the circulation are mediated by variable resistance to flow and by variable storage of blood. The distributative circulatory function is controlled by variable vessel patency and filtration pressure. Resistance in one vascular bed may change independently of that of another. The major site of resistance is the long precapillary arteriole. The arteries, arterioles, and veins constitute independent resistance. The superior mesenteric vascular bed is autoregulatory in that blood flow remains constant over the renge of

blood pressure of 60-200mm Hg. Resistance increased from 0.57mm/Hg/min. at a pressure of 64mm Hg to 0.76 at a pressure of 205mm Hg. The reactivity was studied by local intraarterial infusion of vasoactive substances into the perfused arterial bed. The small intestine is a low-resistance vascular bed which is more responsive to constrictors than to dilators. On a weight and molecular basis, vasopressin and angiotensin were the most potent vasoconstrictors, while glucagon, acetylcholine, and histamine were the most potent dilators. Venoconstriction was demonstrated with epinephrine, levarterenol, angiotensin, and serotonin. Secretion and absorption is dependent in part upon arterial blood flow. Splanchnic blood flow increases about 30% during digestion and absorption. Blood flow shifts toward the intestine and away from the heart, kidneys, and brain, along with a decrease in circulating blood volume and an absence of peripheral vasoconstriction, occur during the dumping syndrome. Serotonin which has similar pharmacologic actions and is released from the small bowel in response to instillation of %%%hyperosmolar%%% solutions, has been implicated. Chronic mesenteric arterial insufficiency is characterized by postprandial abdominal pain, disturbed motility, malabsorption, and anorexia. Acute hemorrhagic necrosis of the gastrointestinal tract occurs in patients with vascular collapse as the result of vasoconstriction of the mesenteric bed and a decrease in splanchnic blood flow. Irreversible shock in the dog from hemorrhage endotoxins, or occlusion of the superior mesenteric artery is associated with characteristic visceral pathology of which acute hemorrhagic necrosis of the gastrointestinal mucosa is the most prominent characteristic. The irreversible stage is characterized by an increasing hematocrit, a progressive plasma loss, and a rising plasma %%%hemoglobin%%%. The common derangement appears to be mechanical limitation of blood flow to the dog intestine. Some of these concepts can be applied to clinical practice. Under conditions of low perfusion pressure and the high vascular resistance occurring in shock, the submucosa is by-passed, with resultant ischemic changes. The use of a \asopressor in shock increases the circulation in the brain and heart, while the blood flow to the intestine and kidney is diminished. Although vasopressor agents may decrease splanchnic pooling of blood, they may comprise in already ischemic intestinal mucosa by decreasing mesenteric flow. ABSTRACT AUTHORS: Author

? t s13/7/1-9

13/7/1
DIALOG(R)File 5:Biosis Previews(R)

18423649 BIOSIS NO.: 200510118149
Effect of blood transfusion in combination with Dextran-40 and %%%hypertonic%%% saline solution on cardiopulmonary haemodynamics of endotoxin (lipopolysaccharide) shock in buffalo calves
AUTHOR: Singh D V (Reprint); Singh R; Sodhi S P S
AUTHOR ADDRESS: Punjab Agr Univ, Coll Vet Sci, Dept Vet Physiol, Ludhiana 141004, Punjab, India**India
AUTHOR E-MAIL ADDRESS: digvijay231@rediffmail.com
JOURNAL: Veterinary Research Communications 29 (5): p421-430 JAN 05 2005
ISSN: 0165-7380
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: The intravenous (i.v.) infusion of lipopolysaccharide (LPS) of E. coli endotoxin in buffalo calves (n = 15) at 5 mu g/kg bw per h for 3 h caused a significant ($p < 0.05$) fall in plasma volume, blood volume, haematocrit haemoglobin, and systolic, diastolic and pulse pressure, mean arterial pressure and central venous pressure (CVP), with a marked rise in respiration. Treatment with a combination of i.v. infusion of 7.2% %%%hypertonic%%% saline solution, Plasmex-D-40 (Dextran-40) and blood successfully alleviated hypovolaemia, and raised systolic, diastolic and pulse pressure, mean arterial pressure and central venous pressure. The whole blood was collected from apparently healthy male buffalo calves 24 h prior to infusion and was transfused without cross-matching. No significant fall in haemoglobin, haematocrit and body temperature was observed after transfusion. All these values tended to remain near normal levels. However, this combination of treatment had no effect on high respiratory rate. A one-time blood transfusion did not evoke any cross-reaction and was helpful in raising haematocrit and haemoglobin close to pre-infusion values. The general symptoms of restlessness, respiratory distress, profuse salivation, violent movement of the ears, snoring, intermittent struggle, etc. were markedly reduced. All the treated animals became quiet and lay with eyes open and survived the 7 h of observation.

13/7/2
DIALOG(R)File 5:Biosis Previews(R)

18089800 BIOSIS NO.: 200400471029
On "blood substitutes" at the level of recent research.
ORIGINAL LANGUAGE TITLE: A "verpotszerekrol" jelenlegi ismereteink alapjan
AUTHOR: Hollan Zsuzsa (Reprint)
AUTHOR ADDRESS: Karolina ut 19-21, H-1518, Budapest, Hungary**Hungary
JOURNAL: Orvosi Hetilap 144 (49): p2395-2398 December 7, 2003 2003
MEDIUM: print
ISSN: 0030-6002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Hungarian

ABSTRACT: The aim to find an artificial %%%substitute%%% for human blood has failed in the past 70 years and will most probabely fail in the following future. Genomics, proteomics and posttranslational research have revealed that blood is our most complex and highly coordinated organ. Plasma substitutes can only promote a single function of plasma: the blood volume replacement. The even more complex coordination of the intraerythrocytic %%%hemoglobin%%% functions based on the allosteric structural changes induced by binding of O2, CO2 and NO can not be replaced safely by artificial oxygen carriers. Cell-free haemoglobin binds NO, which under physiological conditions coordinates O2 supply with the respiratory cycle and vasomotor function. The binding of NO to haemoglobin results in %%%hypertonic%%% crisis and in increase of leukocyte adherance and platelet aggregation. These complications may have a fatal outcome.

13/7/3
DIALOG(R)File 5:Biosis Previews(R)

16758669 BIOSIS NO.: 200200352180
Kinetics of isotonic and %%%hypertonic%%% plasma volume expanders
AUTHOR: Drobin Dan (Reprint); Hahn Robert G
AUTHOR ADDRESS: Department of Anesthesiology, Soder Hospital, S-118 83, Stockholm, Sweden**Sweden
JOURNAL: Anesthesiology (Hagerstown) 96 (6): p1371-1380 June, 2002 2002
MEDIUM: print
ISSN: 0003-3022
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Major differences in plasma volume expansion between infusion fluids are fairly well known, but there is a lack of methods that express their dynamic properties. Therefore, a closer description enabled by kinetic modeling is presented. Methods: Ten healthy male volunteers received, on different occasions, a constant-rate intravenous infusion over 30 min consisting of 25 ml/kg of 0.9% saline, lactated Ringer's solution, acetated Ringer's solution, 5 ml/kg of 7.5% saline, or 3 ml/kg of 7.5% saline in 6% dextran. One-, two-, and three-volume kinetic models were fitted to the dilution of the total venous %%%hemoglobin%%% concentration over 240 min. Osmotic fluid shifts were considered when %%%hypertonic%%% fluid was infused. Results: All fluids induced plasma dilution, which decreased exponentially after the infusions. The ratio of the area under the dilution-time curve and the infused fluid volume showed the following average plasma-dilution dose-effect (efficiency), using 0.9% saline as the reference (= 1): lactated Ringer's solution, 0.88; acetated Ringer's solution, 0.91; %%%hypertonic%%% saline, 3.97; and %%%hypertonic%%% saline in dextran, 7.22 ("area approach"). Another comparison, based on kinetic analysis and simulation, showed that the strength of the respective fluids to dilute the plasma by 20% within 30 min was 0.94, 0.97, 4.44, and 6.15 ("target dilution approach"). Between-subject variability was approximately half as high for the latter approach. Conclusions: The relative efficiency of crystalloid infusion fluids differs depending on whether the entire dilution-time profile or only the maximum dilution is compared. Kinetic analysis and simulation is a useful tool for the study of such differences.

13/7/4
DIALOG(R)File 5:Biosis Previews(R)

13255254 BIOSIS NO.: 199698723087
Resuscitation from severe hemorrhage
AUTHOR: Shoemaker William C (Reprint); Peitzman Andrew B; Bellamy Ronald; Bellomo Rinaldo; Bruttig Stephen P; Capone Antonio; Dubick Michael; Kramer George C; McKenzie Jack E; Pepe Paul E; Safar Peter; Schlichtig Robert; Severinghaus John W; Tisherman Samuel A
AUTHOR ADDRESS: CR Drew University Medicine and Science, Department Emergency Medicine King/Drew Medical Center, MP and N34, 1621 E. 120th Street, Los Angeles, CA 90059, USA**USA

JOURNAL: Critical Care Medicine 24 (2 SUPPL.): pS12-S23 1996 1996
ISSN: 0090-3493
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The potential to be successfully resuscitated from severe traumatic hemorrhagic shock is not only limited by the "golden 1 hr," but also by the "brass (or platinum) 10 mins" for combat casualties and civilian trauma victims with traumatic exsanguination. One research challenge is to determine how best to prevent cardiac arrest during severe hemorrhage, before control of bleeding is possible. Another research challenge is to determine the critical limits of, and optimal treatments for, protracted hemorrhagic hypotension, in order to prevent "delayed" multiple organ failure after hemostasis and all-out resuscitation. Animal research is shifting from the use of unrealistic, pressure-controlled, hemorrhagic shock models and partially realistic, volume-controlled hemorrhagic shock models to more realistic, uncontrolled hemorrhagic shock outcome models. Animal outcome models of combined trauma and shock are needed; a challenge is to find a humane and clinically realistic long-term method for analgesia that does not interfere with cardiovascular responses. Clinical potentials in need of research are shifting from normotensive to hypotensive (limited) fluid resuscitation with plasma substitutes. Topics include optimal temperature, fluid composition, analgesia, and pharmacotherapy. Hypotensive fluid resuscitation in uncontrolled hemorrhagic shock with the addition of moderate resuscitative (28 degree to 32 degree C) hypothermia looks promising in the laboratory. Regarding the composition of the resuscitation fluid, despite encouraging results with new preparations of stroma-free %%%hemoglobin%%% and %%%hypertonic%%% salt solutions with colloid, searches for the optimal combination of oxygen-carrying blood %%%substitute%%%, colloid, and electrolyte solution for limited fluid resuscitation with the smallest volume should continue. For titrating treatment of shock, blood lactate concentrations are of questionable value, although metabolic acidemia seems helpful for prognostication. Development of devices for early noninvasive monitoring of multiple parameters in the field is indicated. Molecular research applies more to protracted hypovolemic shock followed by the systemic inflammatory response syndrome or septic shock, which were not the major topics of this discussion.

ordered

13/7/5
DIALOG(R)File 5:Biosis Previews(R)

13004947 BIOSIS NO.: 199598472780
Diaspirin cross-linked %%%hemoglobin%%% resuscitation of hemorrhage: Comparison of a blood %%%substitute%%% with %%%hypertonic%%% saline and isotonic saline
AUTHOR: Cohn Stephen M (Reprint); Farrell Thomas J
AUTHOR ADDRESS: Sect. Trauma/Surgical Critical Care, Yale Sch. Med., 350 Congress Ave., Suite 3A, New Haven, CT 06510, USA**USA
JOURNAL: Journal of Trauma 39 (2): p210-217 1995 1995
ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

ordered

LANGUAGE: English

ABSTRACT: Resuscitation with tiny volumes of %%%hypertonic%%% solutions rapidly restores tissue perfusion while minimizing edema after hemorrhage and tissue trauma. Methods: We compared an O-2-carrying fluid, Diaspirin Cross-Linked %%%Hemoglobin%%% (DCLHb), to 7.5% NS/Dextran-70 (HTS) or 0.9% saline (NS) in a trauma (celiotomy) hemorrhage model. Anesthetized rats (n = 10/group) underwent a tracheotomy, placement of jugular vein and carotid artery catheters, and placement of an abdominal aortic flow probe. Rats were hemorrhaged (20 mL/kg) from t = 0-15 minutes, and were given NS (group I), 60 mL/kg, HTS (group II), 4 mL/kg, or DCLHb (group III), 4 mL/kg, from t = 15-30 minutes. Sampling mandated removal of an additional 10 mL/kg of blood during the 2-hour experiment. Results: Mean arterial pressure was restored after hemorrhage in all groups. Oxygen delivery, which diminished dramatically after hemorrhage, was less than baseline in all groups after resuscitation. Oxygen consumption was restored in all groups after a sharp decrease during hemorrhage. Base deficit increased in the all groups but was greatest after normal saline or %%%hypertonic%%% saline resuscitation (t = 120 minutes; I = 12 +- 0.4*, II = 13 +- 0.5* c, III = 10 +- 0.1*; = p lt 0.05 versus baseline value within group for groups I, II, and III; c = p lt 0.05 group versus DCLHb (group II), by ANOVA). Conclusion: DCLHb restored mean arterial pressure and ameliorated the development of flow-dependent oxygen consumption. Base deficit, a reflection of systemic oxygen debt, was minimized with this blood %%%substitute%%%. DCLHb may represent a superior small volume resuscitative fluid after trauma and hemorrhage.

13/7/6
DIALOG(R)File 5:Biosis Previews(R)

11926845 BIOSIS NO.: 199396091261
A new salutary resuscitative fluid: Liposome encapsulated %%%hemoglobin%%%/ %%%hypertonic%%% saline solution
AUTHOR: Rabinovici Reuven (Reprint); Rudolph Alan S; Vernick Jerome; Feuerstein Giora
AUTHOR ADDRESS: Trauma Div., Dep. Surg., Jefferson Med. Coll., 1025 Walnut St., Philadelphia, PA 19107-5083, USA**USA
JOURNAL: Journal of Trauma 35 (1): p121-126 1993
ISSN: 0022-5282
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ordered

ABSTRACT: Low-volume resuscitation with %%%hypertonic%%% (7.5%) saline (HTS) is an evolving therapeutic modality for patients with hemorrhagic shock. This solution has been shown to exert protective hemodynamic effects in models of controlled hemorrhagic shock and in several clinical trials. However, HTS has no oxygen-carrying capacity and therefore does not improve oxygen delivery directly. One of the leading strategies in developing an oxygen-carrying resuscitative fluid is the encapsulation of %%%hemoglobin%%% within phospholipid vesicles (LEH). This preparation has the advantage of being blood type and antigen free, easily adaptable to scale-up production, and remarkably stable with a long shelf life. We therefore tested the hypothesis that lyophilized LEH reconstituted with HTS will improve tissue oxygenation and survival in rats exposed to a

lethal controlled hemorrhagic shock. Shock was induced by withdrawal of 70% of blood volume and therapy (n = 10-16) with HTS (5 mL/kg), LEH (5 mL/kg), lactated Ringer's solution (vol:vol = 1:3), LEH-HTS (5 mL/kg), or oxygen (100%) was initiated 15 minutes later. The LEH-HTS improved skeletal muscle oxygen tension directly measured using a thin-film chamber oxygen sensor (PO-2 87 +- 13 mm Hg vs. 40-50 mm Hg in other groups, p lt 0.05). This was associated with improved blood pressure, reduced acidosis, and increased survival at 24 hours (75% vs. 6%25% in other groups, p lt 0.05). In conclusion, the study demonstrates a remarkably salutary effect of LEH reconstituted with HTS as a blood %%%substitute%%% in the treatment of hemorrhagic shock.

13/7/7
DIALOG(R)File 5:Biosis Previews(R)

11143941 BIOSIS NO.: 199243112532
EFFECT OF A SINGLE REPLACEMENT OF ONE OF RINGER LACTATE %%%HYPERTONIC%%% SALINE-DEXTRAN 7 PERCENT ALBUMIN STROMA-FREE %%%HEMOGLOBIN%%% O RAFFINOSE POLYHEMOGLOBIN OR WHOLE BLOOD ON THE LONG TERM SURVIVAL OF UNANESTHETIZED RATS WITH LETHAL HEMORRHAGIC SHOCK AFTER 67 PERCENT ACUTE BLOOD LOSS
AUTHOR: CHANG T M S (Reprint); VARMA R
AUTHOR ADDRESS: ARTIFICIAL CELLS ORGANS RES CENT, FAC MED, MCGILL UNIV, MONTREAL, QUE H3C 1Y6, CAN**CANADA
JOURNAL: Biomaterials Artificial Cells and Immobilization Biotechnology 20 (2-4): p503-510 1992
CONFERENCE/MEETING: MEETING ON BIOMATERIALS, ARTIFICIAL CELLS AND IMMOBILIZATION BIOTECHNOLOGY HELD AT THE IV INTERNATIONAL SYMPOSIUM ON BLOOD SUBSTITUTES, MONTREAL, QUEBEC, CANADA, 1991. BIOMATER ARTIF CELLS IMMOBILIZATION BIOTECHNOL.
ISSN: 1055-7172
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

13/7/8
DIALOG(R)File 5:Biosis Previews(R)

10893899 BIOSIS NO.: 199192139670
EFFECTS OF A HIGHLY CONCENTRATED %%%HYPERTONIC%%% SALINE DEXTRAN VOLUME %%%EXPANDER%%% ON CARDIOPULMONARY FUNCTION IN ANESTHETIZED NORMOVOLEMIC HORSES
AUTHOR: MOON P F (Reprint); SNYDER J R; HASKINS S C; PERRON P R; KRAMER G C
AUTHOR ADDRESS: VET MED TEACHING HOSP, UNIV CALIF, DAVIS, CALIF 95616, USA **USA
JOURNAL: American Journal of Veterinary Research 52 (10): p1611-1618 1991
ISSN: 0002-9645
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Conventional fluid resuscitation is unsatisfactory in a small percentage of equine emergency surgical cases because the large volumes of fluids required cannot be given rapidly enought to adequately

stabilize the horse. In anesthetized horses, the volume expansion and cardiopulmonary effects of a small volume of highly concentrated %%%hypertonic%%% saline-dextran solution were evaluated as an alternative initial fluid choice. Seven halothane-anesthetized, laterally recumbent, spontaneously ventilating, normovolemic horses were treated with a 25% NaCl-24% dextran 70 solution (HSD) at a dosage of 1.0 ml/kg of body weight, IV, infused over 10 minutes , and the effects were measured for 120 minutes after infusion. Plasma volume expansion was rapid and significant (from 36.6 .+-. 4.6 ml/kg to 44.9 .+-. 4.8 ml/kg), and remained significantly expanded for the duration of the experiment. Packed cell volume total blood %%%hemoglobin%%%, and plasma protein concentrations significantly decreased, confirming rapid and sustained volume expansion with hemodilution. Cardiac index and stroke index immediately increased and remained high for the entire study (from 69.6 .+-. 15.3 ml/min/kg to 106.6 .+-. 28.4 ml/min/kg, and from 1.88 .+-. 0.49 ml/beat/kg to 2.50 .+-. 0.72 ml/beat/kg, respectively). Systemic vascular resistance significantly decreased immediately after HSD infusion and remained decreased for the duration of the study (from 1.41 .+-. 0.45 mm Hg/ml/min/kg to 0.88 .+-. 0.22 mm of Hg/ml/min/kg). Arterial and venous blood oxygen content decreased significantly because of hemodilution, but actual oxygen transport transiently increased at the 10-minute measurement before returning toward baseline. Plasma osmolality and sodium significantly increased and remained high for the entire 120 minutes (from 293 .+-. 2 osm/L to 326 .+-. 9 mosm/L, and from 142.8 .+-. 3.3 mM/L to 159.0 .+-. 6.2 mM/L, respectively). Urine output increased in 5 of 7 horses within minutes of HSD infusion, but the mean increase was not statistically significant. Three horses developed transiently severe, clinically apparent intravascular hemolysis and hemoglobinuria. One horse developed multiple single premature ventricular contractions during the infusion with no persistent ECG changes after infusion. The potential benefit of using HSD as a rapid volume %%%expander%%% in anesthetized horses was documented because infusion of 1 ml of HSD/kg rapidly increased plasma volume by approximately 8 ml/kg. Substantial side effects developed in these normovolemic horses, however, and this solution requires further investigation before it can be recommended in hemodynamically unstable horses.

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Experimental osmotherapy with phytocolloids From: REF ZH OTD VYPUSK FARMAKOL TOKSIKOL, 1965, No. 1.54.168. (Translation)
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ABSTRACT: Animals with massive blood loss, experimental edema of the brain, or shock due to burn or other trauma were treated successfully by the method proposed by the author using phytocolloids made from kelp or

evergreen fir. To prepare the blood %%%substitute%%% an acetone extract of fir needles is added to a %%%hypertonic%%% (1. 2%) NaCl solution. When anti-shock or anti-edema solutions are prepared, sodium alginate (the phyto-colloid of kelp) is added. The author believes that the solutions thus obtained have a molecular weight and osmotic and biological properties resembling those of blood. In particular they contain different vitamins and trace elements and considerable amounts (up to 15%) of chlorophyll, which resembles %%%hemoglobin%%% structurally and biologically. The expediency of using phytocolloids is evidenced by data from the usual clinical and histochemical studies, the decrease under the action of the phytocolloids of raised intraocular pressure, the return to normal of the blood cholinesterase activity which is lowered by cerebral edema, and considerably prolonged chronaxy of the anterior tibial and gastrocnemius muscles.

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